

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF ARKANSAS
FAYETTEVILLE DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

VS.

ANTHONY ALLEN JEAN,

Defendant.

CASE NO.

5:15-CR-50087-001

TRANSCRIPT OF MOTION HEARING
BEFORE THE HONORABLE TIMOTHY L. BROOKS
June 23, 2016; 1:08 p.m.
FAYETTEVILLE, ARKANSAS

FOR THE GOVERNMENT:

MR. DENIS DEAN

United States Attorney's Office
414 Parker Avenue
Fort Smith, AR 72901
(479) 249-9040
Denis.Dean@usdoj.gov

FOR THE DEFENDANT:

MR. JOSE MANUEL ALFARO

Federal Public Defender's Office
Western District of Arkansas
3739 N. Steele Blvd., Suite 280
Fayetteville, Arkansas 72703
(479) 442-2306 Phone
Joe_Alfaro@fd.org

Proceedings recorded in realtime via machine shorthand.

Dana Hayden, CCR, RMR, CRR
Federal Official Court Reporter
35 East Mountain Street
Fayetteville, Arkansas 72701

I N D E X
(MOTION HEARING)

	Page
June 23, 2016	
Government Rests.....	96
Defendant Rests.....	174
Closing Argument by the Government.....	174
Closing Argument by the Defendant.....	183
Motion taken under advisement.....	203
Adjournment.....	204
Court Reporter's Certificate.....	205

GOVERNMENT WITNESSES

	Page
Daniel Alfin	
Direct Examination by Mr. Dean.....	14
Cross-Examination by Mr. Alfaro.....	50
Examination by the Court.....	80
Cross-Examination by Mr. Alfaro.....	91
Examination by the Court.....	93
Redirect Examination by Mr. Dean.....	94

DEFENDANT WITNESSES

	Page
Christopher Soghoian	
Direct Examination by Mr. Alfaro.....	97
Cross-Examination by Mr. Dean.....	152
Redirect Examination by Mr. Alfaro.....	169

1	EXHIBIT INDEX			
2				
3	GOVERNMENT'S			
4	<u>NO.</u>	<u>DESCRIPTION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
5	1	Website Posts	22	22
6	2	Website Home Page	25	25
7	3	Website Registration Page	27	27
8	4	Website Index Pages	31	31
9				
10	DEFENDANT'S			
11	<u>NO.</u>	<u>DESCRIPTION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
12	H	Shell Script (Received under seal)	128	129
13	F	Screen Shot - Wireshark (Received under seal)	132	133
14				
15	G	Communication Stream Between NIT and Government (Received under seal)	132	133
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

1 THE COURT: The next matter on the Court's
2 docket today is the case of the United States versus
3 Anthony Allen Jean. Our docket number is
4 5:15-CR-50087-001. The United States is represented
5 today by Denis Dean. Mr. Jean is represented today by
6 Mr. Alfaro.

7 The matter comes before the Court today for
8 purposes of a suppression hearing. Mr. Jean was
9 indicted on December 9th of 2015 on five counts, plus a
10 forfeiture allegation. Counts One through Four charged
11 Mr. Jean with knowing receipt of child pornography, in
12 violation of federal law. Count Five charged him with
13 knowingly possessing a laptop computer containing images
14 of child pornography, in violation of federal law.

15 The trial of this matter was set back in April
16 of this year, but the defense has filed a couple of
17 pretrial motions. The first motion was a motion to
18 suppress certain evidence that was derived from the
19 execution of a search warrant, if I can use that term
20 generally at this point.

21 Since that time there has also been a motion to
22 compel discovery of certain information from the
23 government that is somewhat connected to the issues at
24 display in the motion to suppress. The motion to
25 suppress is filed at Document 19 of the court record.

1 The motion to compel is filed at Document 28 of the
2 court record.

3 This motion is teed -- or this hearing is teed
4 up today to address the suppression motion, Document 19.
5 The Court has read the briefing on that issue, as well
6 as all of the exhibits, the warrant at issue and that
7 sort of thing, and the Court understands that each party
8 intends on calling a witness in support of their
9 respective positions on the motion.

10 I see that you have people seated at counsel
11 table, which I'm assuming are your witnesses. Mr. Dean,
12 would you care to introduce your witness today for the
13 record?

14 MR. DEAN: Yes, your Honor. The government's
15 going to call Special Agent Daniel Alfin. He's FBI
16 headquarters, and he is going to testify about the NIT
17 and all the stuff related to that. He is the lead agent
18 on this case.

19 THE COURT: All right. Pleasure to have you
20 here today, Agent --

21 AGENT ALFIN: Thank your honor.

22 THE COURT: Is it Alfin?

23 AGENT ALFIN: Yes, your Honor.

24 THE COURT: Pleasure to have you here today.

25 Mr. Alfaro, would you like to introduce your

1 witness?

2 MR. ALFARO: Yes, your Honor. We have
3 Dr. Christopher Soghoian, principal technologist with
4 the ACLU, here to testify to similar issues, your Honor.

5 THE COURT: All right. Dr. Soghoian, pleasure
6 to have you in our courtroom here today.

7 Seeing you here reminds me, and I think it
8 appropriate to put this on the record. I have actually
9 met Dr. Soghoian before, although I couldn't have told
10 you his name until Mr. Alfaro mentioned it. There was a
11 national judicial conference back in, I think, the last
12 week of April in Charleston, South Carolina, and there
13 were a couple hundred district court judges. And it was
14 a judicial education program, and one of the topics on
15 the program generally was the -- pertained to the issue
16 that is before the Court today.

17 I elected to attend a different session, and I
18 did not actually participate or attend the session in
19 which Dr. Soghoian was a speaker, but there was a
20 reception at the end of that particular day, a social
21 function at which the judges and the speakers were
22 invited, and I actually ran into Dr. Soghoian in the
23 hallway and had about a five-minute conversation with
24 him, not realizing that he might be present here, but I
25 thought I should disclose that on the record today.

1 That obviously has no impact on the Court's views of the
2 issues.

3 I also wanted to note for the record that the
4 Court's law clerk on this case, Erika Esterbrook, is on
5 vacation today, but she is nevertheless, given the fact
6 that she is a very fine public servant, wanted to be
7 able to hear the proceedings today. So we have her
8 piped in over the Court's conference call system. Her
9 end is muted, but she is capable of hearing what is said
10 in the courtroom today and I wanted to advise everyone
11 of that fact.

12 Generally speaking, the Court understands that,
13 at least from the government's allegations in the
14 indictment, that Mr. Jean, who is a resident of the
15 Western District of Arkansas, was a user of a website
16 known as the Playpen website.

17 It is alleged that the Playpen website was
18 created for the purpose of allowing users to access
19 child pornography and to also engage in discussion
20 boards pertaining to child pornography or the abuse of
21 children in a sexually deviant manner.

22 The Court understands that the government found
23 its way to Mr. Jean after it had, through its
24 investigative efforts, located where the server of the
25 Playpen website was located, which was actually in North

1 Carolina, as I understand it; and in the course of its
2 investigation, law enforcement actually seized the
3 website server, made a copy, and placed a copy of that
4 website on a server under the FBI's control and
5 management in -- somewhere in the Eastern District of
6 Virginia.

7 And the FBI then maintained the server for a
8 period of time, two to four weeks, something like that,
9 and continued its investigation into persons who might
10 be using or gaining access to this website for -- in a
11 manner that would be in violation of federal law.

12 There came a point in time -- I don't have the
13 precise dates, but the dates are set forth in the
14 parties' motions and responses and are not in dispute --
15 but there came a point in time when law enforcement,
16 through the U.S. Attorney's Office, sought a warrant
17 from a magistrate judge in the Eastern District of
18 Virginia in which they requested authority to place what
19 has been referred to in the paperwork as a NIT, which
20 stands for a network investigative technique, into play.

21 I think of that as some sort of malware, but
22 that may not be the technically correct term. Hopefully
23 I'll be educated about that today. But in any event, in
24 a very summary, simplified fashion, the Court
25 understands that, as relevant to the motion here today,

1 the government asked a magistrate judge to issue a
2 search warrant that would allow them to place this
3 malware on the website in such a way that users who
4 typed in their user ID and password, thereby gaining
5 access to the website while the malware was -- or while
6 the website was under the government's control and while
7 the malware was to be sent out, would attach itself to
8 the user's computer in such a fashion that it would
9 collect the IP address of the user, along with some
10 other identifying information, and transmit the IP
11 address back to law enforcement.

12 According to the application and affidavit for
13 the warrant, that technique, or malware as I refer to
14 it, was necessary because this Playpen website operated
15 on what is known as the Darknet, also known as The Onion
16 Router, or Tor for short.

17 The Court understands that Tor is similar to or
18 a place on the Internet that operates in some respects
19 similar to the Internet except that unlike the regular
20 Internet, users' identities, IP addresses, that sort of
21 thing are concealed or masked from all other persons who
22 are using that platform. And while there may be
23 legitimate uses for Tor -- and certainly there are. The
24 Court understands it was actually developed by the
25 Navy -- it is also known in technology circles as a

1 place where people who might have a motivation to engage
2 in criminal activities would conduct business because it
3 readily allows them to conceal their identities and to
4 engage in Internet activities with anonymity.

5 And so the government laid this out in its
6 warrant to the magistrate judge in the Eastern District
7 of Virginia, claiming that this was the most effective
8 way and a necessary way to obtain information that would
9 ultimately lead them to the identity and location of the
10 users of this website.

11 The magistrate judge signed off on that
12 warrant, and the FBI proceeded to maintain the website,
13 again, two- to four-week period, and according to the
14 government, it did exactly what it represented to the
15 magistrate judge that it was going to do. And as the
16 Court understands, this malware allegedly attached
17 itself to Mr. Jean's computer when he accessed the
18 website.

19 It sent back his IP address to the FBI. With
20 the IP address, the FBI then used an administrative
21 subpoena to obtain from the provider the name and
22 address of the user of that IP address, and subsequently
23 with that information in hand, the government applied
24 locally in the Western District of Arkansas for a
25 residential search warrant, which was signed by

1 Magistrate Judge Setser, at which point law enforcement
2 ultimately obtained a computer or other computer-related
3 paraphernalia from Mr. Jean's residence which, according
4 to the government, had evidence that he had received and
5 possessed images of pornography.

6 And incident to this chain of events and series
7 of warrants, Mr. Jean gave statements, which can
8 probably be labeled confessions, or at least culpable
9 admissions, to the government.

10 The Court understands that the defense is
11 seeking to suppress all of the information and evidence
12 and statements that flowed from the first link in the
13 chain, which was the warrant issued by the magistrate
14 judge in the Eastern District of Virginia, which then
15 led to the administrative subpoena for information about
16 Mr. Jean's IP address, which then led to the residential
17 subpoena issued by Judge Setser, which then led to
18 evidence of child pornography on Mr. Jean's computer,
19 which also was incident to certain culpable statements
20 made by Mr. Jean incident to the government's interview
21 of him.

22 And so the defense motion has multiple
23 components to it, but the Court understands at its root
24 that the warrant was either not validly issued and/or
25 constitutionally permissible. Again, there are various

1 issues, and I'm not going to try to restate what is
2 contained in Mr. Alfaro's 20- or 30-page motion, but one
3 of the core issues goes to the notion that Rule 41 of
4 the Federal Rules of Criminal Procedure is a source
5 where certain issuance of warrant powers are delegated
6 to magistrate judges, and there is a contention that the
7 magistrate judge in the Eastern District of Virginia did
8 not have geographical jurisdiction to issue a warrant
9 that would pertain to a seizure of persons or property
10 outside the Eastern District of Virginia. And obviously
11 the Eastern District of Virginia magistrate judge's
12 warrant was the first link in this series of warrants
13 that led law enforcement to Mr. Jean.

14 In response, the government indicates -- and
15 again, to paint this with a fairly broad brush -- that
16 there is nothing improper that the warrant is valid, and
17 even if there were any technical violations, that there
18 are various doctrines developed in the case law that
19 would not require the evidence to be suppressed, even if
20 the Court were to conclude that there was a technical
21 violation.

22 Substantively, the government contends that
23 the -- under Rule 41, I believe, (b)(2) and/or 41(b)(4)
24 that the warrant spelled out the activities of how the
25 government sought to use this malware and that the

1 magistrate judge was fully within her Rule 41(b)
2 authority in issuing that warrant.

3 So that's the Court's, again, big-picture
4 understanding of what the issue is. It would be the
5 Court's understanding that in a motion such as this that
6 ultimately the government bears the burden of proving
7 that the warrant at issue, which is the magistrate
8 judge's warrant out of the Eastern District of Virginia,
9 was valid and/or constitutionally firm, or that the
10 fruits of the search, I should say, were the result of
11 either a valid warrant or otherwise constitutionally
12 proper and within the constraints of the Fourth
13 Amendment.

14 So with that in mind, Mr. Dean, I would ask the
15 Government to proceed at this time.

16 MR. DEAN: Thank your Honor.

17 Government calls Special Agent Dan Alfin.

18 THE COURT: Agent, if you'd please pause right
19 there to be sworn.

20 (Whereupon, the witness was duly sworn.)

21 THE COURT: Sir, you may take a seat in our
22 witness stand.

23 MR. DEAN: Your Honor, I did not prepare a
24 trial notebook, but I do have -- or an exhibit notebook,
25 but I do have some exhibits, if I can use the ELM0.

1 THE COURT: Sure.

2 DANIEL ALFIN,

3 having been first duly sworn, testified as follows:

4 DIRECT EXAMINATION

5 BY MR. DEAN:

6 Q. Please state your name for the record.

7 A. My name is Daniel Alfin, last name spelled
8 A-l-f-i-n.

9 Q. How are you employed, sir?

10 A. I am a special agent with the Federal Bureau of
11 Investigation. I am currently assigned to FBI
12 headquarters, Criminal Investigative Division, Violent
13 Crimes Against Children section, Major Case Coordination
14 unit, located in Maryland.

15 Q. How long have you been with the Federal Bureau of
16 Investigation?

17 A. I've been a special agent with the FBI since April
18 2009. Between September 2009 and approximately July
19 2014, I was assigned to the Albany, New York division of
20 the FBI; and since July 2014, I have been assigned to my
21 current duties in Maryland.

22 Q. What were your responsibilities with that unit up in
23 Albany, New York?

24 A. When I was assigned to the Albany, New York
25 division, I investigated a variety of criminal and

1 national security matters, including child pornography
2 crimes, criminal hacking crimes, national security
3 hacking crimes, and other violations of that nature.

4 Q. And what are your responsibilities with your unit
5 now in Maryland?

6 A. As a special agent with the major case coordination
7 unit, I investigate individuals who use various types of
8 technology to facilitate the production, advertisement
9 and trade of child pornography and other child
10 exploitation crimes.

11 Q. And what is -- what training have you had in
12 relation to that type of investigation?

13 A. I received approximately five months of training at
14 the FBI academy in Quantico, Virginia. Since that time,
15 I have attended a number of other trainings related to
16 investigations involving crimes against children,
17 computer forensic work, other computer security matters.

18 I am currently certified as a instructor with
19 the FBI, certified to teach matters involving crimes
20 against children.

21 Q. Agent Alfin, have you ever accessed child
22 pornography websites on the Tor, T-O-R, network as part
23 of your job duties?

24 A. I have.

25 Q. Briefly -- and we heard the judge talk about it. So

1 I think he has a great understanding of it. But briefly
2 for the record what is the Tor network?

3 A. The Tor network is accessible initially through use
4 of the regular Internet. It runs on top of the regular
5 Internet, and it is made up of hundreds of thousands of
6 computers all around the world.

7 Tor affords its users two primary uses. The
8 first is the user using the Tor network can use it to
9 connect to a website or other type of Internet service
10 on the regular Internet in an anonymous capability. So
11 a user could use the Tor software or the Tor browser
12 software to connect to a regular Internet website,
13 Google.com, CNN.com, any normal website.

14 In doing so through the Tor network, that
15 website cannot see where you're actually coming from.
16 So if I were to access Google.com from this courtroom
17 using the Tor software, Google would not know that I was
18 here in Arkansas. It may pull an IP address somewhere
19 else in the country or somewhere else in the world. It
20 wouldn't be able to locate me here.

21 Another use of the Tor network are what are
22 referred to as hidden services. So when you run a
23 website or other Internet service within the Tor
24 network, that service is now referred to as a hidden
25 service and so when a website is configured to operate

1 as a hidden service, it can only be accessed through use
2 of the Tor software. It can no longer be accessed on
3 the traditional Internet in the manner that you would
4 normally access Google.com. You need to use special
5 software to access the hidden service.

6 And so the hidden service affords the same --
7 the same benefits that I described earlier in that a
8 user who accesses a hidden service, his or her IP
9 address and other identifying information is concealed.
10 The owner and operator of the hidden service cannot see
11 it.

12 The additional benefit that Tor provides to
13 operators of hidden services is that the true IP address
14 and location of the hidden service is similarly
15 concealed. As an example, if I were to run a hidden
16 service here in this room and have a laptop connect to
17 it also here in this room, neither one of those two
18 services or laptop would know that they were here in the
19 same room.

20 As far as they were concerned, they could be
21 anywhere in the world. And so Tor hidden services are
22 frequently used to host child pornography websites
23 because of these types of security benefits afforded to
24 operators of such websites, and these are the areas
25 where I focus the majority of my investigative work.

1 Q. Thank you. Did you participate in the investigation
2 of the website that is involved in this case, the
3 website that has been alternatively referred to as
4 website A, or Playpen?

5 A. I did.

6 Q. How did you become aware of Playpen initially?

7 A. In approximately August 2014, links to the Playpen
8 website were advertised on websites that contained links
9 to numerous child pornography websites. And so when the
10 Playpen link became active, I accessed it around that
11 time, and I observed that it was, in fact, a website
12 whose primary purpose was the advertisement and
13 distribution of child pornography.

14 Q. And just to be clear, was Playpen located on the Tor
15 network?

16 A. It was. It was configured to operate as a hidden
17 service.

18 Q. Now, you've kind of already gotten into this, but
19 just specifically to Playpen, how would somebody find
20 Playpen or know of its existence? Could you Google it?

21 A. Generally, no. Websites that operate as hidden
22 services, first of all, you need to download special
23 software. Common software used to access the Tor
24 network is called the Tor browser. It looks and
25 functions similarly to any regular Internet Web browser.

1 However, its connections go through the Tor network, and
2 it has the capability to access Tor hidden services.

3 So a user would first have to learn of the Tor
4 network, and they would have to download the Tor browser
5 software, which is freely available. You can download
6 it from the Tor Project website.

7 So a user would have to download this and
8 install this software on their computer. And at that
9 point in order to access a site such as Playpen, they
10 would still need to find the link to the website such as
11 Playpen which, again, you would have to have some level
12 of knowledge in order to find it. Generally links to
13 websites like Playpen can only be found on index sites
14 that list links to child pornography websites.

15 Websites that exist on the Tor network, hidden
16 services, there are a number of lists of websites that
17 you can find on both the regular Internet and the -- and
18 within Tor configured as hidden services.

19 These sites do not function as traditional
20 search engines. They don't have the same functionality
21 as Google or Bing. Generally they are just lists of
22 websites that are updated manually. And in fact, the
23 most popular Tor site that is sometimes referred to as a
24 Tor search engine actively bans child pornography
25 websites from showing up in its results. It has a

1 disclaimer and a warning saying such websites will not
2 be allowed to be listed here and they will be
3 blacklisted if someone attempts to access -- to list
4 them there.

5 And so there are other websites who
6 generally -- that exist whose purposes are entirely
7 dedicated to advertising links to child pornography
8 websites. And so again, a user would have to find their
9 way to one of these websites that list links to other
10 child porn websites and find it from there.

11 Q. So in your opinion what are the -- what's the
12 possibility of somebody happening upon the Playpen
13 website, when it existed?

14 A. It would be incredibly unlikely for someone to
15 accidentally stumble on the Playpen website without
16 knowing what its purpose was.

17 Q. Okay. I'm going to show you -- attempt to show
18 you -- what has been marked as Government's Exhibit 1,
19 if you'll look at the monitor there. Do you see that?

20 A. I see it in front of me.

21 Q. Okay. What are we looking at?

22 A. This is a post that was made on the Playpen website.
23 It is dated December 15, 2014, and this post was created
24 by the creator and primary administrator of the Playpen
25 website.

1 In this post the administrator states, in
2 response to a question, that he will change the server
3 location and URL of Playpen every so often just to keep
4 them guessing.

5 Based on my training and experience, I
6 understand "them" to be me or other law enforcement
7 agencies. And then the administrator further states
8 that he will always post the new link to Playpen on two
9 websites, and he provides the link to those two
10 websites. Those two websites are the Hard Candy section
11 of the hidden wiki.

12 The hidden wiki itself contains links to
13 various Tor hidden services. Not all of them are child
14 porn; not all of them are illegal. However, the Hard
15 Candy section where the administrator has linked to is
16 dedicated to child exploitation sites such as Playpen
17 and that is where the administrator states that he will
18 advertise his website.

19 Q. And what's the other one?

20 A. That is a mirror of the same Hard Candy section of
21 the hidden wiki.

22 Q. And just to reiterate, this post was actually
23 located on the Playpen website by the administrator of
24 Playpen?

25 A. Correct.

1 MR. DEAN: Your Honor, at this time I'd like to
2 have this exhibit admitted as Government's 1.

3 MR. ALFARO: No objection.

4 THE COURT: Government's 1 will be received.

5 (By Mr. Dean:)

6 Q. Agent Alfin, I am showing you what has been
7 premarked as Government's Exhibit 2 for identification
8 purposes. What are we looking at here?

9 A. This is the -- after a user found the link to the
10 Playpen website, after clicking on that link, this is
11 the page that that user would be presented with upon
12 first accessing the Playpen website.

13 It gives the user the opportunity to log in to
14 the website with an existing account. There is also a
15 link on the page to register a new account.

16 Q. Okay. Up in the upper left-hand corner, there's two
17 images. What do those images appear to be?

18 A. There are two prepubescent females depicted on
19 either side of the logo that says "Playpen." They are
20 both clothed, their legs are spread, but their genitals
21 are not nude, posing next to the Playpen logo.

22 Q. Okay. Just below that it says "No cross-board
23 reposts, .7z preferred, encrypt filenames, include
24 preview. Peace out."

25 What do those terms mean to you, if anything?

1 A. Based on my training and experience, I know these
2 terms to be a trade craft associated with child
3 pornography websites. These terms and variations of
4 them appear on multiple child pornography websites. And
5 so no cross-board reposts is a warning indicating that a
6 user of Playpen should not go to another child porn
7 website, find a link to an image or a video of child
8 porn and then come back to Playpen and post that link
9 there and claim credit for it themselves.

10 ".7z preferred" indicate users who share child
11 pornography on the Playpen website should use 7-Zip --
12 that's 7-Z-i-p -- compression software to share their
13 material.

14 7-Zip is, again, certainly not illegal. It's
15 freely available software that can be used to compress
16 files, multiple files, into a smaller one. It also adds
17 security benefits.

18 Material provided in a 7-Zip encrypted file can
19 be encrypted with fairly strong encryption that can be
20 difficult or impossible to break, which is why it is the
21 preferred method of distributing child pornography.

22 "Encrypt filenames" is another reference to an
23 option within the 7-Zip software and so if you have
24 placed child pornography inside one of these 7-Zip
25 archives, you encrypt both the material and the

1 filenames of the material inside of it and so an outside
2 observer who obtained that file, if they don't have the
3 true password, they would have no idea what is contained
4 in that file. It could be innocent material; it could
5 be illegal material. They would have no way of knowing.

6 "Include preview" is a reference to how users
7 should post material on the website. Generally material
8 that was distributed on Playpen and other such websites
9 is done through an encrypted archives as described
10 previously. However, users are encouraged to post a
11 preview of the material that they are sharing.

12 So generally if a user were to post, say, a
13 30-minute video, a user would post a link to the 7-Zip
14 file that contains that video, and they would also post
15 some screen captures from the video so a user could see
16 what the video depicts before deciding whether or not
17 they want to download the entire video. And so all of
18 those lines up there, aside from "peace out" are, based
19 on my training and experience, trade craft common to
20 child pornography websites.

21 Q. And just to be clear, during your investigation,
22 there was a period of time where this was the first
23 page, the login page that you would come to if you
24 access the Playpen site; is that correct?

25 A. Correct. From the time that the Playpen website

1 came online in approximately August 2014 until sometime
2 on February 19th, 2015, this, or slight variations of
3 this, page were what a user would be presented with.
4 During that entire time period, the logo was as it is
5 now.

6 Q. Okay. Now --

7 MR. DEAN: Your Honor, at this time I'd like to
8 have this admitted as Government's 2.

9 MR. ALFARO: No objection, your Honor.

10 THE COURT: Government's 2 will be received.

11 (By Mr. Dean:)

12 Q. Describe how one would log on to the Playpen site.

13 A. After a user arrived at the homepage of the Playpen
14 website, a user would have to do one of two things. If
15 they had been there previously, they would have to enter
16 their username and password that they previously created
17 and log in to the Playpen website with that previously
18 established account.

19 If a user did not have an existing account or
20 did not wish to use their existing account, they could
21 click on the link that I believe read "register a new
22 account." And so if a user were to register a new
23 account, they would be taken to the registration page of
24 the Playpen website.

25 Q. I feel like the least tech-savvy person in this

1 courtroom. I've got this thing where you can read it
2 now.

3 I'm showing you what's been premarked as
4 Government's Exhibit 3. What is this on your computer
5 monitor?

6 A. This is the registration page that I just spoke of a
7 second ago. This is what a user would have been
8 presented with after clicking on the link to register a
9 new account. And so these -- this is the registration
10 message that was created by the creator of the Playpen
11 website. It contains several things, again, that I
12 understand, based on my training and experience, to be
13 trade craft related to child pornography websites.

14 Q. What are those things?

15 A. Specifically this -- these instructions state that
16 in order to register an account on the Playpen website,
17 because of the software being used, a user has to enter
18 a e-mail address.

19 The board administrator cautioned users not to
20 enter a real e-mail address. He stated that "The
21 software requires it, but we're not going to send you
22 any e-mail address. Don't enter anything real; just
23 enter in something that looks like an e-mail address for
24 your own safety." And so this, again, I understand to
25 be a trade craft common with these websites.

1 There is also other information contained on
2 the bottom of the page recommending security settings
3 that a user should enable on their computer when
4 accessing websites such as the Playpen website.

5 MR. DEAN: At this time, your Honor, I'd like
6 to have this admitted as Government's Exhibit 3.

7 MR. ALFARO: No objection, your Honor.

8 THE COURT: Government's 3 will be received.

9 (By Mr. Dean:)

10 Q. Special Agent Alfin, once you log in -- register,
11 log in, or log in as a returning user to Playpen, what
12 do you see when you get into the website?

13 A. After logging in to the Playpen website, you are --
14 you were presented with the index page of the website.
15 And so Playpen was configured as a message board-style
16 website and so the index page contains various subforums
17 on the website that a user could then go to. The
18 subforums had names and titles indicative of the type of
19 material that was advertised in those sections of the
20 website.

21 As an example, one of the most popular sections
22 of the website was the Preteen Videos Girls Hardcore
23 section, which would purport to advertise links to
24 videos of child pornography depicting prepubescent
25 females engaged in penetrative sexual activity.

1 Q. And again, you have spent time going through the
2 Playpen website and are familiar with the contents
3 therein?

4 A. I have.

5 Q. Approximately all, part -- what percentage of this
6 website is dedicated to the furtherance or the
7 production, receipt, or possession of child pornography?

8 A. Well, not every single subforum generally contains
9 links to images and videos. The website in its entirety
10 is dedicated to the advertisement and distribution of
11 child pornography.

12 Q. Thank you. And you said that a lot better than I
13 said it. Appreciate that.

14 What are we looking here that I've premarked as
15 Government's Exhibit 4?

16 A. This is the top of the index page and so this
17 exhibit is -- was split up into multiple images because
18 the index page was very long and so this was the first
19 five subforums that would be displayed on the index
20 page.

21 Q. Okay. So we're doing this for ease of use, but as
22 you would pull it up, there would be a bunch, bunch of
23 topics that we're about to go through here?

24 A. Correct.

25 Q. Okay.

1 A. And so all of these would display on one single Web
2 page, but they couldn't be shown properly on the slide
3 and so this is just a continuation of the names and
4 titles of these sections and subforums on the Playpen
5 website.

6 Q. Based on your experience, what does the term
7 "jailbait" mean?

8 A. "Jailbait" is generally a reference to under 18 boys
9 and girls who have started to show some signs of sexual
10 development, whether it be penis growth or breast
11 development but still child pornography, still children
12 under the age of 18. Those images and videos in my
13 experience generally depict children aged between 13 and
14 17.

15 Q. Girls SC/NN?

16 A. SC is an abbreviation for soft core. NN is an
17 abbreviation for nonnude. Also appearing on the page is
18 an abbreviation HC, which is an abbreviation for
19 hardcore.

20 Q. And on this index that we're looking at, you have
21 those, just call them subcategories, but then you have a
22 black line above that that says what?

23 A. The black line at the top says preteen videos and
24 then the subforums listed under it are the subcategories
25 of preteen videos, girls, boys, et cetera.

1 Q. Okay. I have on this page a black box or category
2 entitled "Potpourri." Does that mean anything?

3 A. The Potpourri section is just a section for various
4 fetishes and other topics that don't necessarily fit
5 with the other areas. Specifically, the toddlers
6 section is listed here because people searching out
7 generally prepubescent child pornography aren't always
8 interested in toddler material as well. So the toddler
9 section had its own section on the website.

10 Q. What was contained in the toddler section?

11 A. As indicated and as would be expected on a website
12 such as this, it contained links to images and videos of
13 toddlers being sexually abused.

14 And this, these are the various subforums in
15 what was labeled the Kinky Fetish section of the Playpen
16 website including sections such as Bondage, Peeing,
17 Scat, which is a reference to feces, Zoo, which was the
18 bestiality child pornography website section of Playpen.

19 Q. What's it say below "Zoo"?

20 A. Below Zoo it says "Kids who really love their pets."

21 Q. And again, that depicts pretty much what it says
22 there?

23 A. Yes. I reviewed the content from that section and
24 it does, in fact, contain child pornography involving
25 the abuse of both children and animals.

1 Q. What's this next page say?

2 A. This is the "Other Language" section of the Playpen
3 website. There were various foreign language sections
4 where users could share and trade child pornography and
5 discuss that child pornography with people who spoke the
6 same language that they did. They were not as heavily
7 trafficked as other sections of the Playpen website.
8 The majority of the Playpen website was in English.

9 Q. And this final page?

10 A. And this is the last two sections available on the
11 Playpen website for distributing both fictional and
12 nonfictional stories of real world child abuse.

13 MR. DEAN: Your Honor, I'd like to have this
14 exhibit that I've paper-clipped -- it's about seven
15 pages -- together admitted as Government's Exhibit 4.

16 MR. ALFARO: No objection, your Honor.

17 THE COURT: Exhibit 4 will be received.

18 (By Mr. Dean:)

19 Q. So we just saw a bunch of categories or forums.
20 Once you clicked on that forum, you would then -- what
21 would happen? What would the user see?

22 A. After -- for example, after clicking, viewing the
23 Preteen Videos Girls Hardcore forum link, after a user
24 clicked on that link, they would be taken to the Preteen
25 Videos Girls Hardcore section of Playpen. And so on

1 that page, they would see topic titles for all of the
2 current posts in that section.

3 Those titles would generally describe the
4 images and videos of child pornography contained within
5 those posts.

6 Q. And then once you clicked on that, you would
7 actually see previews or thumbnails like you previously
8 described?

9 A. After clicking on one of these posts in the -- this
10 particular section of the website, you would generally
11 see a link to download videos or images. In some
12 instances preview images would immediately be displayed
13 on your screen.

14 Q. So once you discovered Playpen website and got on
15 there and discovered its contents, did you attempt to
16 find out who the administrator of the website was?

17 A. Between August 2014 and December 2014, because
18 Playpen was operating as a hidden service, we were
19 unable to identify where the service was located and we
20 were unable to identify who was running it.

21 Q. So for that period of time, would it be safe to say
22 that you could -- you knew about the website, you could
23 see it, you knew people were using it, but you had no
24 idea how to stop it?

25 A. That is correct. We did not have any viable

1 investigative means at that time to take down the
2 website.

3 Q. Okay.

4 A. And so in December 2014, the FBI received
5 information about the true location of the server
6 hosting Playpen. I was able to independently verify
7 that information, and I was able to confirm that the
8 website was, in fact, being hosted in North Carolina.

9 Q. Okay. And what happened next in the investigation?

10 A. We -- at that time we began the work to seize a copy
11 of the website. We also began working to identify the
12 owner and operator of the website.

13 Q. Was that person found?

14 A. He was. We were able to identify him, and he was
15 arrested at his residence in Naples, Florida, on
16 February 19th, 2015.

17 Q. Were you present at the execution of that search
18 warrant?

19 A. I was.

20 Q. What of interest was found in the Naples, Florida
21 residence of the administrator of the Playpen site?

22 A. Of most importance was found a laptop in the
23 residence, and at the time that I encountered the
24 laptop, it was actively logged in to the website, the
25 Playpen website, as the administrative account. It was

1 also logged in to the servers hosting the Playpen
2 website as the root or administrative account of those
3 servers as well, and --

4 Q. Which you testified to at that time was located in
5 North Carolina?

6 A. Correct.

7 Q. Okay. I'm showing you what's been premarked
8 Government's Exhibit 5. What are we looking at here?

9 A. This is a picture of the home page as it was changed
10 to on sometime in the evening hours approximately of
11 February 19th, 2015. This is the -- importantly on this
12 page, the logo has been changed and so this is the logo
13 that was active on the website when I encountered the
14 administrator's laptop in his residence on February
15 19th, 2015.

16 The logo has been changed slightly. The text
17 and trade craft that I described earlier remains.
18 However, the two prepubescent females that I described
19 earlier have been replaced with what appears to be a
20 single prepubescent female posed in a sexually
21 suggestive manner.

22 Q. Now, you don't know exactly, but you seem to have a
23 pretty good idea of when the logo change occurred. Was
24 there something on the Web site that indicated when the
25 logo change?

1 A. In the hours leading up to his arrest, review after
2 the fact found that the administrator had made a post
3 earlier that day indicating that he had just put the new
4 logo on the website.

5 Q. Now, at the time that you were present in the home
6 of the administrator on February 19th, do you recall
7 taking specific notice of the fact that there was a logo
8 change on the homepage of the website?

9 A. I did see the administrator's laptop screen. I did
10 see that he was logged in to Playpen and so I did see
11 the new logo.

12 I did not observe the new logo at the time. It
13 did not jump out to me as a significant or material
14 change to the website. The website itself remained
15 unchanged. It was still the same Playpen website. It
16 was still a website dedicated to the advertisement and
17 distribution of child pornography.

18 Q. Now, did you prepare the affidavit for the NIT
19 warrant that was sought in the Eastern District of
20 Virginia specific to this case?

21 A. I did contribute information to that warrant, yes.

22 Q. How did you describe the logo in that NIT warrant?

23 A. In that NIT warrant, which reflects how the logo
24 appeared on a specific date and time, it did depict the
25 previous logo which featured the two prepubescent

1 females as opposed to the single prepubescent female.

2 And that, the warrant affidavit, I don't
3 remember the exact date, but it does say that that is
4 how the logo appeared on February, I believe it was
5 February 3rd, 2015, but there is a specific date of
6 review identified in that warrant.

7 Q. Okay. Was it your intent to try to mislead the
8 magistrate or --

9 A. Absolutely not.

10 Q. So what happened to the server that was located in
11 North Carolina?

12 A. The server located in North Carolina was seized by
13 the FBI, and a copy of the Playpen website was
14 transferred to an FBI facility in the Eastern District
15 of Virginia.

16 At this time because of the nature of the Tor
17 network and how the Playpen website acted as a hidden
18 service, despite having seized the website and despite
19 having arrested the administrator, the FBI still has no
20 information at its disposal, no ability to actually find
21 and identify the members of the Playpen website.

22 Q. What action did the FBI take once the server was
23 moved to Virginia?

24 A. After the -- prior to putting the website back
25 online from a government facility in the Eastern

1 District of Virginia, the FBI sought and received a
2 search warrant which described the use of a network
3 investigative technique, also referred to as an NIT, as
4 the Court described previously. And so the NIT warrant
5 was signed and the FBI put the server back online for a
6 period of approximately 13 days in an attempt to
7 identify other users and members of the Playpen website.

8 Q. Are you familiar with the general operation of this
9 NIT that was deployed on the website?

10 A. I am.

11 Q. Why was it necessary to use a NIT in this case?

12 A. As described previously, users who were connected to
13 the Playpen website, because it acted as a Tor hidden
14 service, even though it was under government control, we
15 still had no ability to determine the true location of
16 the users of the Playpen website and so the NIT was the
17 only investigative method available to the FBI that
18 would allow us to identify these users.

19 Q. Describe for the Court generally how the NIT worked
20 in this case.

21 A. As described in the NIT warrant application, the FBI
22 put forth an application stating that a user who logs in
23 to the Playpen website with a username and password, at
24 that point the FBI has probable cause to determine that
25 that individual is attempting to access, receive, or

1 distribute child pornography and so the actual
2 implementation was far more restricted than that.

3 In order for the NIT to be deployed, or
4 triggered, a user had to first log in to the Playpen
5 website with a username and a password. They would then
6 have to navigate to a forum on the -- a subforum on the
7 Playpen website such as the Preteen Videos Girls
8 Hardcore forum.

9 After opening that forum and viewing the list
10 of topics contained in that forum, a user would then
11 have to open up one of those posts, and after opening
12 that post is the triggering event that would, for lack
13 of a better term, activate the NIT.

14 Q. So the magistrate in Virginia actually gave y'all a
15 little bit broader authority than you actually utilized
16 when you employed the NIT?

17 A. Yes. Given the nature of the website, we had
18 probable cause to believe that anyone logging in to the
19 website was attempting to commit federal crimes
20 involving child pornography. However, the FBI further
21 restricted how we deployed the technique for a variety
22 of reasons.

23 Q. Agent Alfin, Judge Brooks earlier in his summary
24 referred to the NIT as malware. Is that accurate?

25 A. It's mostly an opinion that I personally don't

1 believe has any significant bearing on the matter at
2 hand. However, I have noted in related hearings that my
3 personal opinion is that the NIT should not be
4 considered malware, the primary reason being malware is
5 an amalgamation of two words, "malicious" and
6 "software." And so understandably so, individuals in
7 the computer science community have used the term "NIT"
8 to -- used the term "malware" to the refer to the FBI
9 NIT.

10 However, the word "malicious" has -- it has
11 very specific meaning within the context of a federal
12 criminal proceeding. It appears in Title 18 of the
13 United States Code and so it is my opinion that society
14 would not deem the actions of a law enforcement officer,
15 acting under a court order, as malicious.

16 And so for that reason I do not believe the
17 NIT, in the course of a criminal proceeding, should be
18 referred to as malicious or as malware; again, my
19 opinion based on the meaning of the word "malicious" as
20 it appears in Title 18.

21 THE COURT: But other than the fact that you
22 take exception to the word "malicious" since law
23 enforcement would be using this technique in an ethical
24 manner, a legal, permissible manner presumably,
25 structurally the way that it is deployed onto the user's

1 computer, does it work similar to the way that an
2 unethical hacker --

3 THE WITNESS: It does, your Honor, yes.

4 (By Mr. Dean:)

5 Q. Were reports generated regarding the users,
6 including their activity, collected by the NIT as you
7 described?

8 A. Yes. The FBI generated user reports for user
9 accounts on the Playpen website. Those reports contain
10 two different sets of data.

11 One set of data is information related to the
12 website and it's collected independent of the NIT and so
13 that information contains information -- excuse me.
14 That report contains information such as the date that
15 the user account was registered; the number of hours
16 that that user account was logged in to the website.

17 It also contains information specific to the
18 time period February 20th, 2015, through March 4th,
19 2015, that shows specific actions that that user took
20 during that timeframe.

21 We're able to include that information in the
22 report -- excuse me -- only for that 13-day period
23 because that is the period where the FBI had control of
24 the website. And so for those 13 days, we can say
25 exactly what each user on the website did, what posts

1 they went to, and what images of child pornography that
2 user downloaded and so the second --

3 Q. I'm sorry. Continue.

4 A. The second set of data contained in this user report
5 is the data that was collected by the NIT. And so the
6 data that was collected by the NIT are the items that
7 the Court described previously, and they are the items
8 that are described in the attachment to the NIT search
9 warrant from the Eastern District of Virginia.

10 Q. Okay. And that would be only the date and time the
11 FBI received the information, the IP address, the MAC
12 address, the hostname, the log-on name, and the
13 operating system of the computer?

14 A. That information is displayed in that portion of the
15 report, correct.

16 Q. Was such a report generated for a user by the --
17 that went by "regalbegal"?

18 A. Yes.

19 Q. According to the report, how many hours was
20 regalbegal logged onto the Playpen website during the
21 time period that you've described, the two-week time
22 period?

23 A. Well, it doesn't get down to that level for that
24 piece of information.

25 Q. Sorry.

1 A. The actual, the regalbegal account over the course
2 of approximately five or six months between the time it
3 was registered and between March 4th, 2015, spent just
4 under 30 hours logged in to the Playpen website.

5 Q. And you were able to see how many posts were
6 accessed by regalbegal during the time that the FBI took
7 over this website. Is that accurate?

8 A. Correct.

9 Q. How many?

10 A. During just the 13 days when the FBI had control of
11 the website, the regalbegal accessed approximately 70 or
12 72, 74 posts on the website.

13 Q. Now, on this report that was of information
14 collected by the NIT -- and I'm sure the Court is
15 familiar with this, but just to make a good record, what
16 exactly is an IP address?

17 A. An IP address can be thought of similar to a phone
18 number. Anyone who wants to access the Internet, anyone
19 who wants to access a website, you need to connect to
20 the Internet using an IP address. And your IP address
21 is assigned to you by your Internet service provider, be
22 it Verizon, Comcast, Cox, AT&T, whoever your Internet
23 service provider is.

24 And so you receive your IP address from that
25 provider and that allows you to communicate with other

1 computers, with other devices across the Internet.

2 At any given time, only one -- only one modem
3 connected to the Internet can have an IP address and so
4 if you are able to identify an IP address and a date and
5 a time that it's associated with criminal activity, you
6 can take that information, put it into an administrative
7 subpoena, provide it to an Internet service provider,
8 and they can tell you who was using that IP address on
9 that date and time.

10 Q. So to simplify, if there was an Internet -- one
11 Internet connection in this courtroom right now,
12 wireless connection, four or five people were on it,
13 there would be one IP address for this Internet
14 connection?

15 A. When you have a household or a business or other
16 organization that has multiple devices connecting to the
17 Internet, it's common that that organization or that
18 household will use something called network address
19 translation, and what that means in layman's terms is it
20 allows multiple computers, phones, devices to connect to
21 the Internet all through the same IP address.

22 So generally if you have Internet service at
23 your home, your -- the modem, the device given to you by
24 your Internet service provider will have one IP address,
25 and all the devices accessing the Internet from your

1 home will share that IP address through the technology
2 that I referred to as network address translation.

3 Q. Okay. And then going further, what is the MAC
4 address? What does that refer to?

5 A. An MAC address is a unique identifier associated
6 with a particular network adapter. And so if you use a
7 wi-fi card on the laptop or a hardwired network
8 connection on a desktop computer or other device, or
9 even on a cellphone, every single network adapter that
10 you use to connect to an Internet has a unique MAC
11 address associated with it, and that MAC address
12 generally does not change.

13 And so even if your -- even if your IP address
14 from your Internet service provider changes, the MAC
15 address on, say, your laptop computer will not. That is
16 essentially hardwired into that device. It is a unique
17 identifier.

18 Q. Are you aware in this specific case what regalbegal
19 did to trigger -- what user regalbegal did to trigger
20 the NIT?

21 A. Yes. In the matter at hand, a user using the
22 regalbegal account logged in to the Playpen website with
23 the previously established regalbegal account. After
24 arriving at the index page of the website, that user
25 went to the Preteen Videos Girls Hardcore section of the

1 Playpen website and then that user opened a post that
2 purported to advertise prepubescent female children
3 engaged in penetrative sexual activity.

4 Q. And at that point the NIT was deployed on that
5 computer?

6 A. That's correct.

7 Q. Once the data was collected by the NIT, where was it
8 returned?

9 A. It was returned to and collected by a government
10 FBI-controlled server in the Eastern District of
11 Virginia.

12 Q. And once that information was returned, how were
13 investigating agents able to access it?

14 A. After that information was collected, it was put
15 into the reports that we described earlier. Using the
16 information that was collected, we sent out
17 administrative subpoenas using the IP addresses that
18 were collected in order to identify the users of the
19 Playpen website.

20 The reports that we generated were sent to the
21 various FBI field offices containing the summary of the
22 user accounts, the activities that those user accounts
23 performed, and the information collected by the NIT.

24 Q. And I should have asked earlier. In terms of the
25 deployment of the NIT, when the user clicked on the

1 particular message that you described earlier, is that
2 an active process or a passive process?

3 A. The user actively, they browse through the website
4 and they open up that post. The NIT was deployed
5 silently in the background without the user's knowledge.

6 Q. So just to be clear, the NIT did not deploy for
7 anybody who merely logged onto the website?

8 A. That is not always the case. In a number of
9 instances, specific users who had previously been
10 determined to be involved in -- as an example, if any
11 administrator of the website logged in, the NIT would be
12 triggered for that user.

13 Q. Okay. But --

14 A. But in general, for users such as the regalbegal
15 account, who were not moderators and administrators, for
16 those users generally they would have to navigate down
17 into the website and actually access material on the
18 website.

19 Q. And that's what I was getting to. Poorly worded
20 question.

21 Does the IP address come from a user's computer
22 or someplace else?

23 A. So because of the technology that I described
24 earlier, network address translation, the IP address
25 that the NIT collects generally isn't actually resident

1 on that device. It's resident on the modem that that
2 user is using to connect to the Internet.

3 And so when the NIT collects the information
4 that it's authorized to collect and sends it back to the
5 government over the Internet, we can see what IP address
6 that information is coming from, and that is the IP
7 address that we use to identify the users of the
8 website.

9 Q. How?

10 A. So because we have now collected that IP address, we
11 have a specific date and time that that IP address was
12 collected. We know that it was associated with a
13 particular user on the Playpen website. We were able to
14 use that IP address to issue an administrative subpoena,
15 and the Internet service provider will then identify
16 that user to us.

17 Q. So in this case the defendant, Anthony Jean, was
18 physically located in Benton County, Arkansas, at the
19 time the NIT was deployed. Did that information pop up
20 when the NIT was deployed, that you had a computer in a
21 house in Benton County, Arkansas?

22 A. After the FBI received the IP address from the NIT,
23 we were able to generally geolocate the area. If you
24 know an IP address, there are a number of databases and
25 websites that you can use to try to figure out which

1 part of the country that IP address is in and so we
2 could reasonably determine that IP address belonged to
3 an individual in the Arkansas area. However, we could
4 not get the street address or subscriber name without
5 sending a subpoena first.

6 Q. Okay. And that was next question: What further
7 steps did you have to take to narrow it down to an
8 individual's residence?

9 A. We sent a subpoena to the Internet service provider.
10 The IP address also is publicly registered to a specific
11 Internet service provider and so you look up who that
12 provider is and that is who you serve the subpoena on.

13 Q. So the NIT gives you a number, an IP address; then
14 you have to use another tool outside of the NIT to
15 narrow that down to a regional area and get an Internet
16 service provider; and then you have to get further
17 information from that Internet service provider?

18 A. That's fair, yes.

19 Q. Was the information collected by the NIT in this
20 case ultimately tied to the defendant's residence in
21 Benton County, Arkansas?

22 A. Yes, it was.

23 Q. Okay. And were you present for any search warrants
24 executed here in the Western District of Arkansas?

25 A. I was not.

1 Q. Have you reviewed reports and talked to agents about
2 the execution of the search warrants here?

3 A. I have been informed that a search warrant was
4 executed.

5 Q. Okay.

6 A. I was informed that Mr. Jean made statements that
7 can be construed as admissions, and I was further
8 informed that evidence relating to child pornography was
9 seized from the residence.

10 Q. Are there any questions that I have left out that
11 you feel you need to advise the judge of at this time?

12 A. Not at this point in time.

13 Q. Okay.

14 MR. DEAN: Thank your Honor.

15 THE COURT: Mr. Dean, I meant to say this at
16 the beginning of the hearing, but I failed to do so.
17 There is a separate motion to compel production of
18 certain information that has been briefed, but that was
19 not set for a hearing today. But to the extent that you
20 would like to elicit testimony from either of the
21 witnesses today that go to that issue, you should feel
22 free to do so if that would avoid the necessity of
23 having to recall the witness.

24 If we need to have a hearing on that and you'd
25 like to recall them at that time, that's fine. I'm just

1 giving you the opportunity today, if you wanted to, to
2 inquire --

3 MR. DEAN: Your Honor --

4 THE COURT: -- to any testimony that might
5 support or oppose that motion.

6 MR. DEAN: I appreciate that. Can I have a
7 second to confer with my witness?

8 THE COURT: Well, better than that. You can go
9 ahead and let Mr. Alfaro conduct his cross-examination
10 and then we'll -- depending on how long that is, we'll
11 probably take a break and then you can come back and go
12 over that before you rest.

13 MR. DEAN: I appreciate that, your Honor.
14 Thank you.

15 THE COURT: Mr. Alfaro?

16 MR. ALFARO: Thank your Honor.

17 CROSS-EXAMINATION

18 BY MR. ALFARO:

19 Q. Agent Alfin, my name is Joe Alfaro. Sometimes I
20 speak too fast. So if I speak too fast and you don't
21 understand a question, just let me know, okay?

22 A. Okay.

23 Q. Thank you.

24 In your direct testimony, you were talking
25 about some language that was associated with the Playpen

1 website. Specifically I believe it was -- here it is --
2 Government Exhibit 5. Got it backwards.

3 MR. DEAN: I didn't make that easy on you. I'm
4 sorry.

5 (By Mr. Alfaro:)

6 Q. Right there, where it says ".7z preferred"?

7 A. Yes.

8 Q. You said that that was indicative in your experience
9 of trade craft involving child pornography?

10 A. Not that line on its own. The totality of all that
11 information there. 7-Zip, as I also stated in my
12 direct, can be used for legal purposes. I frequently
13 use it for legal purposes during the course of my work.

14 Q. So when you said -- you provided a copy of the NIT
15 code to my office, correct, or you had that sent?

16 A. I prepared it and I believe it was --

17 Q. Was that deployed with 7z also?

18 A. It was.

19 Q. The "no cross-board posts," would that be something
20 in a general chat room?

21 A. I'm not familiar with any chat rooms where that
22 would be utilized.

23 Q. You're not familiar with any chat room where they
24 say don't cross-post on different topics?

25 A. Sorry. What are you implying that cross-board --

1 what "cross-post" means?

2 Q. How about, can you explain to us what "no
3 cross-post" means.

4 A. So in the context of the Playpen website, this is a
5 warning and a rule that exists on multiple child
6 pornography websites that I reviewed and so what it
7 means is generally when you share a link to a video
8 or --

9 Q. Let's back up. Here's my question.

10 MR. DEAN: Your Honor, if he can answer the
11 question that he was asked and then we can move on with
12 another question.

13 MR. ALFARO: Well, Judge, if I can clarify. My
14 question was what does "cross-board post" mean, not
15 reference to the specific website. Just what does that
16 mean. So that's the -- where I'd like to start.

17 MR. DEAN: And it sounded to me like he was
18 attempting to answer that before he was cut off.

19 THE COURT: Well, I'm going to let you rephrase
20 your question one more time. And to the extent that the
21 witness can answer that in a generic sense, he may.

22 MR. ALFARO: Thank your Honor. I'll rephrase.
23 (By Mr. Alfaro:)

24 Q. Is it possible for there to be this prohibition of
25 cross-board posts on chat rooms not associated with

1 child pornography?

2 A. Certainly.

3 Q. You testified on your direct that you first came
4 into knowledge about this Playpen website in August of
5 2014?

6 A. Approximately August 2014, yes.

7 Q. Then in December of 2014, you received information
8 from a foreign law enforcement agency about the Playpen
9 website. Would that be correct?

10 A. That's correct.

11 Q. Around that time Playpen had been accessible on the
12 normal Internet, correct?

13 A. Very briefly, to very select individuals, yes. Due
14 to a misconfiguration in the server that was hosting the
15 Playpen website, if you knew the true IP address of the
16 Playpen website, such as an administrator would, you
17 could actually use a regular Internet browser and access
18 the Playpen website, despite the fact that it was
19 configured as a Tor hidden service.

20 Q. Are there type of technologies that someone can use
21 to just access every single website in a matter of
22 minutes?

23 A. I'm sorry. Could you clarify the question?

24 Q. Sure. Is there a type of technology where someone
25 could access all the IP addresses on the Internet and

1 look at those pages?

2 A. In a matter of minutes? No. There are millions and
3 billions of websites that exist on the Internet. That
4 could not be done. You could not review that material
5 in a matter of minutes.

6 Q. You testified that you participated in the search
7 warrant in Florida for the administrator's website,
8 correct?

9 A. I participated in the execution of the search
10 warrant at the residence of the individual who created
11 the Playpen website.

12 Q. Okay. Agent, and just so I can move things faster,
13 a lot of my questions are going to be yes or no. If it
14 can't be explained with a yes or no, just let me know,
15 and I'll give you the opportunity. I'm certainly not
16 going to try and ask anything that's going to trip you
17 up, okay?

18 A. Okay.

19 Q. Thank you, agent.

20 When you executed the search warrant of the
21 administrator, did you see his laptop?

22 A. I did.

23 Q. When you saw his laptop, did you see the homepage?

24 A. I don't recall if it was the homepage, but a page of
25 the Playpen website was displayed on the laptop screen.

1 Q. Did you see this page (indicating)?

2 A. Well, no. That is the prelog-on page. When I
3 observed the laptop, the administrator had logged on to
4 the website already.

5 However, in the effort of being direct, the
6 logo that is displayed on this page was displayed on the
7 page that I saw at the administrator's residence.

8 Q. So when you saw the page, you saw the logo, this
9 logo right here in Government Exhibit 5?

10 A. That is correct.

11 Q. And you test- -- is it true that you testified on
12 direct that this logo is not the same logo that's
13 mentioned in the application for the NIT warrant?

14 A. That is correct.

15 Q. Did you also testify that you aided in the
16 preparation of the application for the NIT warrant?

17 A. Prior to leaving for Florida, I did aid in preparing
18 that warrant, yes.

19 Q. The search warrant, the NIT search warrant, that was
20 prepared after the search of the residence in Florida,
21 correct?

22 A. It was sworn to after the search warrant execution
23 began, but the material that I contributed to it, I
24 contributed to it before leaving my office for Florida.

25 Q. So before it was submitted to Judge Buchanan, the

1 search had already occurred --

2 A. The search in Florida --

3 Q. -- in Florida?

4 A. -- had already occurred, yes, that's correct.

5 Q. And you had already seen this image?

6 A. That's correct.

7 Q. Did you convey this discrepancy to the affiant of
8 the warrant in the Eastern District of Virginia, that
9 NIT warrant?

10 A. I did not.

11 Q. Was Judge Buchanan in any way notified of the change
12 in the logo?

13 MR. DEAN: Your Honor, I'm going to object to
14 this line of questioning. The defense counsel has not
15 asked for a Franks hearing. It's kind of getting close
16 to that. We've kind of gone over the fact that the logo
17 has changed; he didn't notice it; he didn't put it in
18 the warrant. I think we should move on.

19 THE COURT: Well, I'm going to overrule your
20 objection, but I would say to Mr. Alfaro, I think I've
21 got the point.

22 MR. ALFARO: Thank your Honor.

23 THE COURT: You can proceed.

24 MR. ALFARO: Your Honor, that was the last line
25 of questioning for that.

1 (By Mr. Alfaro:)

2 Q. Do you know if Judge Buchanan had any questions
3 about how the NIT worked before it was signed, the
4 warrant?

5 A. I'm not aware of whether or not the judge asked any
6 questions.

7 Q. Would I be correct in saying -- in summarizing your
8 direct in saying that due to the nature of the Tor
9 browser, you couldn't identify the person or the
10 location of people who were logging in to the website?

11 A. I would say due to the nature of the Tor network
12 that that is generally true, yes.

13 Q. So it was impossible for you to determine who and
14 where these individuals were without the use of the NIT?

15 A. Generally, yes.

16 Q. You testified in direct, I believe, that the FBI
17 seized the server of the Playpen from North Carolina and
18 moved it to Virginia?

19 A. We transferred a copy of the website to Virginia.
20 We did not physically move the server from North
21 Carolina.

22 Q. So the server in North Carolina, was that running
23 Playpen?

24 A. As of the time that it was seized, yes.

25 Q. How about after it was seized?

1 A. No.

2 Q. So would I be correct in saying that the only server
3 that was running Playpen after February 20th was the FBI
4 server in Virginia?

5 A. I think that's accurate, yes.

6 Q. Once the server or the copy of the server of Playpen
7 was under the control of the FBI, did you shut it down
8 immediately?

9 A. We shut down the server in North Carolina
10 immediately after seizing it and then we took the copy
11 of the website to our server in the Eastern District of
12 Virginia and then we brought the website back online
13 there.

14 Q. So it was still operational when it was in Virginia?

15 A. We made it operational in Virginia.

16 Q. So you had -- it was not operational, transferred to
17 Virginia, and then you restarted it to make it
18 operational?

19 A. Yes. It was shut down for a period of time while it
20 was being transferred, the data was being transferred
21 from North Carolina to Virginia.

22 Q. And individuals -- once it was operational in
23 Virginia, people were still allowed to access it by
24 logging on?

25 A. Yes, that's correct. They could continue to access

1 the website as they had done previously.

2 Q. And then at that point in time, the FBI wanted to
3 utilize this thing, the NIT?

4 A. The NIT warrant was signed prior to the FBI turning
5 the website back on.

6 Q. And was I -- did I hear correct that the warrant
7 that you received authorized you to deploy the NIT
8 automatically when someone logged in to the website?

9 A. Correct. After logging in to the website, the
10 warrant authorized us to utilize the NIT at that time.

11 Q. And on some users that occurred, and on some users
12 it didn't occur?

13 A. We -- again as I stated earlier, for users such as
14 administrators of the website, if an administrator of
15 the Web site had logged in, an attempt would be made to
16 deploy the NIT against them at that time.

17 Q. Okay.

18 A. For the majority of users, it was more restricted.

19 Q. When the NIT is put on the server in Virginia,
20 before anybody logs in, is it collecting any identifying
21 information?

22 A. No.

23 Q. Then when someone logs in, there is a triggering
24 mechanism that deploys this NIT, correct?

25 A. That's correct.

1 Q. Then this NIT is transmitted to these computers
2 unknowingly?

3 A. Unknowingly to the user of the Playpen website,
4 that's correct. They did not know that it was
5 happening.

6 Q. And then the NIT is downloaded to the target
7 computer?

8 A. Yes, that's correct.

9 Q. And in this case Mr. Jean's computer, that would
10 mean it would allegedly be in Arkansas?

11 A. That's correct.

12 Q. Once the NIT gets to the computer in Arkansas, is it
13 the NIT -- let me rephrase that.

14 Is there a component that forces the NIT to run
15 on that computer?

16 A. I'm sorry. The question doesn't make sense from a
17 technical perspective, but if you'll allow me, I think I
18 know where you're going and I can answer the question.

19 Q. Well, I guess I'll just be more direct. Is there
20 something called an exploit, which is a -- I assume is a
21 set of computer instructions, that allows the NIT to
22 run?

23 A. There is an exploit that is used in the case and so
24 the exploit can be thought of as an open window on the
25 computer. And so the government, obviously we know

1 about this open window and that's what we're able to
2 send the NIT through. And so we use this exploit, the
3 open window, and we send the NIT.

4 Q. Could the NIT have --

5 A. The NIT collects the --

6 Q. I'm sorry.

7 A. The NIT collects the information and sends it back
8 to the government. The state of the window, it was open
9 when we got there; it was open when we left. We did not
10 have any impact or make any change to the window.

11 Q. Well, you said you didn't make -- you said you
12 didn't make any changes. Did you review a copy of the
13 exploit code?

14 A. I have not actually reviewed the source code for the
15 exploit, but I have used it on a computer under my
16 control and observed that it does not make any changes
17 to the computer.

18 Q. It didn't make any changes to the computer that you
19 deployed it on?

20 A. That's correct.

21 Q. But you don't know if that exploit changed any of
22 the other computers?

23 A. I do. It was the same exploit that was used. It
24 was not capable of making changes to the computer.

25 Q. Could the NIT have run without the exploit?

1 A. You're connecting them in an awkward way, but we
2 would not have had a mechanism to deploy the NIT without
3 the exploit. We would not have had a mechanism, right,
4 to deploy the NIT without the exploit.

5 Q. Did the NIT warrant mention anything about the
6 exploit?

7 A. It did not have the word "exploit" in it, but it did
8 have a thorough breakdown of how the NIT was going to
9 work and the information that was going to be collected.

10 Q. When the NIT is doing whatever it is it's supposed
11 to do -- you said it's collecting information, correct?

12 A. Yes, that's a fair statement.

13 Q. And it's collecting information on a computer
14 located outside of Virginia?

15 A. In some instances, yes.

16 Q. And then the NIT sends the information back to
17 Virginia?

18 A. Yes.

19 Q. Did the NIT in this case, Mr. Jean's case,
20 successfully -- execute successfully on Mr. Jean's
21 computer?

22 A. It did.

23 Q. Did it collect everything that it was supposed to
24 collect?

25 A. It did.

1 Q. What categories of information did the NIT collect?

2 A. It collected items identified in the NIT warrant
3 attachment, such as the MAC address that was in use on
4 the computer, the operating system version that was in
5 use on the computer, the hostname of the computer, and
6 the active username on the computer.

7 Q. This is -- the information you described, was that
8 provided in the document -- or the software that you
9 would call the two-way network data stream?

10 A. Yes. The network data that was transmitted from the
11 defendant's computer to the government's server was
12 collected, and it was provided to defense for review.

13 Q. Where was that information received?

14 A. Where, where did we collect the network data?

15 Q. Yes.

16 A. It was collected at the server in the Eastern
17 District of Virginia.

18 Q. Is that data that the FBI received and recorded the
19 exact same data that's sent by the NIT?

20 A. Yes.

21 Q. Did the information sent by the NIT change when it
22 was sent from the defendant's computer to the government
23 computer?

24 A. There was no individual or organization in existence
25 that would have had the capability to do that and so I

1 can say it with certainty that the information sent from
2 the defendant's computer to the government was not
3 changed and it was, in fact, identical to the
4 information sent from the defendant's computer.

5 Q. How many computers were targeted with the NIT?

6 A. Any user who accessed the website and met the
7 triggering condition would have been --

8 Q. Do you know how many? Can you give me an estimate
9 of how many numbers?

10 A. I can tell you in the matter at hand, it was one
11 computer.

12 Q. I guess -- well, my question is this. You estimated
13 about -- a percentage of the websites dedicated to child
14 pornography and it was a rough guess.

15 Can you give me a rough guess of how many users
16 you targeted with the NIT?

17 MR. DEAN: Objection. I think this is
18 irrelevant to this case. We're dealing with Mr. Jean.
19 We're not dealing with all these other cases.

20 MR. ALFARO: I don't think it's irrelevant.
21 We're talking about the nature of the technology, how
22 many users were targeted and how the NIT worked and if
23 it was the same for every computer.

24 THE COURT: Overruled.

25 A. There were -- during the time that the FBI had

1 control of the website, there were approximately 100,000
2 user accounts that were active in that timeframe that
3 would have been subject to an attempted deployment of
4 the NIT.

5 Q. So would I be correct in estimating that about
6 100,000 user accounts were subject to the NIT warrant?

7 A. Yes, approximately 100,000 user accounts logged in
8 to the Playpen website and met the triggering condition
9 as identified in the Playpen warrant.

10 I should clarify. It was common trade craft in
11 some cases for users to register new accounts every time
12 they logged on to the website and so that 100,000 number
13 is not an indication that there were 100,000 unique
14 individuals. There could have been individuals using
15 multiple accounts and so I just want to be clear --

16 Q. Sure.

17 A. -- that it's 100,000 Playpen user accounts, which is
18 not translated into 100,000 individual computers.

19 Q. So then my question is in your estimation, since
20 you're the lead agent for the NIT that was distributed
21 in this operation, could you please estimate how many
22 users, actual individual users, were subject to the NIT?

23 MR. DEAN: Your Honor, I'm going to renew my
24 objection. This is irrelevant to the case against
25 Mr. Jean.

1 THE COURT: Overruled.

2 A. 100,000 user accounts met the triggering condition
3 and were subject to the conditions in the NIT warrant.

4 Q. So is it --

5 A. Approximately 100,000.

6 Q. So it was approximately 100,000 individuals?

7 A. No. 100,000 Playpen user accounts.

8 Q. So then my question is approximately how many
9 individual users -- you don't have to give me an exact
10 number -- that the NIT was targeted towards?

11 A. Again, I feel like I've answered the question and
12 detailed why I can't give you the exact user number. It
13 was 100- -- approximately 100,000 unique Playpen user
14 accounts. Some users reused -- did not reuse their
15 account every time.

16 Q. So --

17 A. In my estimation --

18 Q. You don't know how many individual --

19 THE COURT: Mr. Alfaro?

20 MR. ALFARO: I'm sorry.

21 THE COURT: We can't have two people talking at
22 the same time.

23 MR. ALFARO: I understand, your Honor. I
24 apologize for that.

25 A. Based on my training and experience, in review of

1 the Playpen website, most users did reuse an account.
2 So I would estimate that the number of unique
3 individuals who were subject to the warrant would be
4 slightly less than the 100,000 number. I think that's
5 the question that you're asking.

6 Q. Thank you. I'll move on. I'm not trying to
7 strong-arm you. I apologize if I'm coming off that way.

8 Before the NIT was deployed in your
9 investigation --

10 MR. DEAN: Your Honor, may we approach?

11 THE COURT: No.

12 MR. DEAN: Okay.

13 THE COURT: But you can object and state
14 something. I don't know why we need to approach.

15 MR. DEAN: It's on a related matter but not in
16 response to his question. I wanted to do it out of the
17 purview of the witnesses.

18 THE COURT: Oh, outside of the witnesses'
19 hearing?

20 MR. DEAN: Yes, your Honor.

21 THE COURT: All right.

22 (Bench conference, to wit:)

23 MR. DEAN: Your Honor, the government is not
24 trying to be obstructive in this case but we do have
25 vast concerns with specifically witness Soghoian

1 actively tweeting information about these cases also and
2 using social media to talk about these cases.

3 He has left the courtroom a couple of times. I
4 have no reason to believe that he has been tweeting, but
5 I would like the Court to possibly issue a gag order to
6 all the witnesses and parties in this case to not talk
7 about anything that has been going on while this
8 matter's pending because I don't want to taint a
9 possible jury panel.

10 So getting to some of the stuff -- and that's
11 why I'm objecting because some of the stuff I can
12 totally seeing it show up on social media with this guy.
13 And again, I'm not saying anything negative about him
14 but he just, he likes to use his First Amendment right
15 quite a bit.

16 In this case I don't want any of our potential
17 jury members in the Western District of Arkansas to be
18 tainted by any of this material. So I would like a gag
19 order to be placed.

20 THE COURT: Well, number one, Mr. Alfaro, why
21 is your witness getting up and leaving the courtroom?

22 MR. ALFARO: My understanding, your Honor, he's
23 a lot like me. He drinks a lot of water and has to
24 urinate frequently. So he's asked me -- or told me on
25 at least two occasions he needs to use the rest room.

1 So that's my understanding.

2 THE COURT: All right. Go ask him if he has
3 been tweeting or using any other social media during the
4 course of this hearing when he's stepped outside.

5 MR. DEAN: And I will say for the record that
6 we do have information that he tweeted probably about an
7 hour before that he was testifying. That's my concern.

8 THE COURT: Please go ask him.

9 MR. ALFARO: Yes, sir.

10 He's assured me, your Honor, that he's been
11 going to the rest room. He is not using his phone.
12 He's not tweeting, not using social media. His phone is
13 on airplane mode, which I understand is he can't access
14 the Internet.

15 THE COURT: Does that satisfy your inquiry?

16 MR. DEAN: I would still like a gag order to be
17 placed on all the witnesses in this.

18 THE COURT: I'm not going to do that. Based on
19 the foundation that you have sketched out, which, based
20 on Mr. Alfaro's inquiry is completely -- is a completely
21 unsubstantiated premise.

22 This hearing is not closed. Members of the
23 public could walk in. A reporter for a national
24 publication could walk in here, take scrupulous notes
25 and walk outside afterwards and have a story online in

1 five minutes. And so no.

2 MR. DEAN: Okay. Thank your Honor.

3 (End of bench conference.)

4 (By Mr. Alfaro:)

5 Q. Agent Alfin, during your investigation with this
6 Playpen website and the Tor browser, did you ever
7 attempt to try and search for the Playpen website in a
8 Tor search engine?

9 A. What are you referring to as a Tor search engine?

10 Q. I believe you testified on direct examination that
11 there are things like a hidden wiki or something that
12 makes these Tor -- these websites that are being
13 operated in a Tor network searchable?

14 A. So I just want to be -- I want to be clear. The
15 words "search engine" typically refers to a website with
16 the capabilities and functions such as Google or Bing.
17 There are what I refer to as sometimes called hidden
18 service search engines that don't have those same
19 capabilities and so I just want to be clear that I'm not
20 implying that they have those same capabilities.

21 I did find links to the Playpen website
22 advertised on child porn index pages within the Tor
23 network.

24 Q. Did you try to search for the Playpen website on a
25 regular Internet browser?

1 A. On a regular search engine?

2 Q. Yes.

3 A. I did not.

4 MR. ALFARO: If I may have one second, your
5 Honor.

6 THE COURT: Sure.

7 (By Mr. Alfaro:)

8 Q. I think I have a better way of asking my last
9 question we were hung up off of, and this will be the
10 last question I have for you now.

11 How many computers did the NIT successfully
12 deploy on?

13 A. There are a number of ongoing investigations, both
14 domestically and internationally. If the Court orders
15 me to answer that question, I will, of course. However,
16 I would ask for the Court's permission to either refrain
17 from answering the question or answer that question in a
18 manner that would not make it publicly available.

19 MR. DEAN: And, your Honor, I'm going to object
20 again to relevance.

21 MR. ALFARO: And, your Honor, given the agent's
22 statement, we are fine with whatever the Court's
23 position is on that question.

24 THE COURT: Well, agent, you've mentioned the
25 number of user accounts that accessed the Playpen

1 website during the period that it was monitored by the
2 FBI. This question has been asked several times, but
3 let me try to ask it one more time a little bit more
4 succinctly.

5 Do you know, or does the FBI have data which
6 would suggest how many unique individuals accessed the
7 Playpen website during the period of time when it was
8 monitored by the FBI?

9 THE WITNESS: I don't want to -- I don't want
10 to seem combative, but I think the two questions -- I
11 know how many individuals that the NIT successfully
12 identified. I do know the answer to that question.

13 It is my belief that that could compromise
14 ongoing investigations but I, of course, will answer the
15 question if your Honor orders me to.

16 THE COURT: All right. What is secretive if
17 we're talking about orders of magnitudes? We know that
18 there were 100,000 user accounts that accessed it. Help
19 me understand what is sensitive about knowing the order
20 of magnitude relative to 100,000 of individuals that
21 were identified?

22 THE WITNESS: Because of the nature of how we
23 share information with foreign law enforcement agencies,
24 all of the -- currently on the Tor network, Playpen has
25 obviously been taken offline.

1 There are other websites that have risen to
2 fill the void that have hundreds of thousands of users
3 on them and so every document that has been filed
4 unsealed in these Playpen investigations, a number of
5 tweets made by the defense expert in this case are
6 heavily scrutinized and analyzed by members of those
7 communities and so they read those and they react to
8 them and they say, well, it looks like they share
9 information with this country or that country; so we
10 should start wiping computers; or, this investigation
11 was larger or smaller than we thought it was. So people
12 are safe; people are not safe.

13 There are a number of legal proceedings going
14 on in multiple foreign countries. In some of those
15 countries not all -- despite the fact that our
16 investigation took place in early 2015, because of the
17 amount of time it takes to get work done in some foreign
18 countries, there are still some individuals of the
19 website who have not yet been arrested or apprehended.

20 And so my concern is that giving a clear
21 answer -- again, I will certainly do that if the Court
22 orders it, but giving that answer may jeopardize those
23 investigations that are still ongoing.

24 It is certainly my belief that at some point in
25 time, that information will come out. There is no way

1 to prevent it, but because of the nature of the ongoing
2 investigations and my personal opinion that it is not
3 related to the defendant, that is why I would request
4 the Court's permission not to answer that.

5 THE COURT: Well, let me be a little more
6 specific to be sure we're talking about the same thing.
7 In order to get to Mr. Jean, there were at least two
8 steps involved. One was the information recovered from
9 the NIT; in particular, the IP address.

10 THE WITNESS: Yes, your Honor.

11 THE COURT: The second step was to make -- to
12 serve an administrative subpoena on the Internet service
13 provider, and that provided you with a name and
14 residential address that corresponded to the account
15 that the Internet service provider had with its
16 customer, correct?

17 THE WITNESS: Yes, your Honor.

18 THE COURT: When -- the question at hand about
19 how many individuals have been identified by law
20 enforcement, is the number that you are guarding and
21 seek not to answer the number of specific individuals or
22 the number of unique IP addresses that were recovered
23 that would -- in other words, IP addresses would still
24 have some measure of anonymity; the second step would
25 provide you more specifics.

1 Are you reluctant to provide the number of
2 unique IP addresses that were recovered or the number of
3 individuals through the second step of the
4 administrative subpoena that have been yielded?

5 THE WITNESS: It would be the number of IP
6 addresses, your Honor, the reason for that being
7 public -- information about this investigation has been
8 widely disseminated and reported on and commented on in
9 the active child exploitation communities and so when we
10 give any numbers in one filing, the government was
11 forced to disclose the number of individuals that had
12 been charged within the United States.

13 And so that information was reported within the
14 child exploitation communities, it was heavily analyzed,
15 and people assumed, well, at this point I'm safe; they
16 only got this very small number of people and so I don't
17 need to worry about it.

18 If the government were to disclose the number
19 of IP addresses that were actually collected -- and the
20 government has already disclosed that there were a
21 number of subjects in foreign countries -- giving
22 further detail into the full scope of the operation
23 could cause individuals in countries where they
24 currently think they're safe to rethink that and start
25 destroying evidence or take other means to prevent law

1 enforcement in those countries from being able to
2 actually identify them.

3 THE COURT: So of the 100,000 user accounts
4 that accessed the website during the time that it was
5 being managed by the government, were those user
6 accounts located both within and without -- and outside
7 the United States?

8 THE WITNESS: Yes, your Honor. My unit has
9 been working with international counterparts as part of
10 this investigation. We did identify a number of
11 individuals in foreign countries.

12 THE COURT: All right.

13 Mr. Alfaro, against that background, I mean, I
14 can see how this information might have a certain
15 journalistic value to it, but trying to focus on the
16 facts that are necessary for the Court to understand to
17 rule on this motion, help me understand how knowing the
18 total number of unique IP addresses goes to the validity
19 of the search warrant out of the Eastern District of
20 Virginia which you are challenging, or more generally,
21 the constitutional infirmity that you are alleging. How
22 does knowing that information assist the Court in
23 resolving that issue?

24 MR. ALFARO: And I'll be -- I'll do my best to
25 try and articulate that, Judge, with my extreme layman

1 understanding of all this technical aspect.

2 But the government, I think the linchpin in
3 their case is we are so confident that we got this IP
4 address correctly, there's no need to worry that there
5 was any error, that we were able to link regalbegal to
6 this IP address that they geolooked up and said, oh,
7 it's in Arkansas.

8 So we want to know the number to see how many
9 IP addresses they collected to understand the validity,
10 and we think we may be able to show that this process
11 was not stronghold, as the government shows, meaning
12 they got an IP address, but can they -- can they show
13 where it's from, and how many IP addresses are they
14 dealing with and what is the level of error that could
15 have come when they're trying to associate these IP
16 addresses together.

17 THE COURT: The Court is going to sustain the
18 government's objection. I mean, the question is not --
19 has nothing to do with how successful the government was
20 in harvesting information after it had the search
21 warrant in hand and executed the search warrant.

22 The question is was there any impropriety in
23 the representations that were made to the issuing Court
24 that the issuing Court would not have -- that would have
25 caused the issuing Court not to have issued the search

1 warrant, had the correct information have been reported.

2 In this instance, the Court recalls that it was
3 represented in the application or the affidavit that the
4 government was aware of some 200,000 total user accounts
5 during a two-week period.

6 Frankly I'm surprised that 100,000 people
7 logged in. But I don't see -- if we're talking just
8 order of magnitudes, I don't see how that would
9 possibly -- any of the information that you were
10 soliciting would possibly go to invalidate the warrant
11 and so for those reasons, the government's objection is
12 going to be sustained, which is not to say that that --
13 I mean, I don't know at this point whether or not, if
14 the defense is, you know, they got the wrong person or
15 that the technique was not accurate in identifying the
16 correct person if Mr. Jean and regalbegal are different
17 people.

18 If that's the angle of attack, then accuracy of
19 the technique might be relevant down the down road if
20 the defense is you got the wrong guy. But for purposes
21 of attacking the validity of the warrant, I don't see
22 how that has any value. So the objection will be
23 sustained.

24 MR. ALFARO: Thank your Honor. And just to
25 clarify, just to make a proper record, I think that if

1 you know the number and if we are able to demonstrate
2 that the collection data has some sort of error, then I
3 think when it goes to the argument to the warrant is the
4 government would and -- was and should have been aware
5 of this possible error, but they didn't communicate that
6 to the judge when they applied for the warrant.

7 So that would be akin to having a confidential
8 informant knowing that they are unreliable but not
9 disclosing that fact in the warrant.

10 So that is how I would attempt to tie together,
11 Judge.

12 THE COURT: Or it might be that the
13 confidential informant reasonably believed that 12
14 members of a drug trafficking organization were going to
15 be present at a particular place at a particular time
16 and that information is conveyed to a judge and a
17 warrant is issued and they show up and only a fourth of
18 them are present. I mean, so what.

19 MR. ALFARO: And so, your Honor, I guess the
20 point isn't that the error is known with the CI. The
21 error is known from the law enforcement officers that we
22 know this person to be untruthful, so if there's a
23 chance that the evidence could be tainted. So I would
24 take it from that angle, Judge.

25 THE COURT: Well, then why don't you ask the

1 witness whether he was aware of any propensity for the
2 NIT to return errant information and whether that, any
3 such information, was intentionally withheld from the
4 magistrate judge. That seems to be a better angle of
5 attack.

6 MR. ALFARO: I understand. I believe I asked
7 the question of whether the information was changed, and
8 he said it wasn't.

9 THE COURT: I think he did. So there's your
10 answer right there.

11 MR. ALFARO: Thank your Honor.

12 THE COURT: All right.

13 Mr. Dean?

14 MR. DEAN: I have no followup at this time,
15 your Honor. I would like to save this witness for any
16 possible rebuttal.

17 THE COURT: All right.

18 EXAMINATION

19 BY THE COURT:

20 Q. Agent, if I understand the sequence in the search
21 warrant that was executed at the administrator's
22 residence in Naples occurred prior to the FBI seeking
23 the warrant from the magistrate judge to deploy the NIT?

24 A. That's correct, your Honor. The search warrant
25 execution in Florida began the evening of February 19th,

1 2015, and the NIT warrant was sworn out the morning of
2 February 20th, 2015.

3 Q. And where was -- out of -- what judicial officer
4 approved the warrant that was used to -- I don't need
5 their names, but what judicial officer assisted in
6 approving the warrant for the Naples residence?

7 A. I provided a -- I provided the bulk of the
8 information that went into that warrant. Are you asking
9 who actually was the affiant on that warrant?

10 Q. I'm trying to find out whether there was a district
11 judge that was involved with this case, either from a
12 Title III perspective or any other perspective, that may
13 have been involved and consulted when warrants became
14 necessary and was therefore factually involved and that
15 the FBI had been presenting warrants to and why that
16 judge was not consulted for the issuance of the NIT
17 warrant.

18 A. I'm aware that there was a separate Title III
19 authorization separate from the NIT warrant. I believe
20 that was put in front of a district court judge as Title
21 IIIs are required to.

22 Q. In the Eastern District of Virginia?

23 A. Yes, your Honor.

24 Q. All right. Why was that judge not consulted -- two
25 questions -- or two aspects of this question, and I

1 frankly don't know the answer to this.

2 Could the request for the deployment of a NIT
3 have been included in the Title III application, and if
4 so, why was it not?

5 Second part of the inquiry is since you had a
6 judge that was involved and being consulted to review
7 your Title III applications, why was that same judge
8 not -- in the Eastern District of Virginia not consulted
9 for the deployment of the NIT in question?

10 A. The government's understanding and interpretation of
11 Rule 41 is that a magistrate judge does have the
12 authority to issue a warrant such as the one that was
13 utilized in this investigation and so that would be the
14 reason why we didn't request that it specifically be
15 authorized by a district court judge.

16 Q. Well, I understand that you reasonably believe that
17 the magistrate judge had that authority, but that wasn't
18 my question. My question is why did the FBI elect to
19 seek out the magistrate judge to sign this as opposed to
20 seeking out a district court judge; for example, a
21 district court judge that already had familiarity with
22 the investigation and who was signing off on the Title
23 III warrant?

24 A. I'm not -- I don't know if there was any conscious
25 decision made there to go to a magistrate versus a

1 district court judge. In my experience, search
2 warrants, we generally seek approval from a magistrate
3 judge. So it could have just been done as a normal
4 course of business.

5 I do know that the NIT warrant has since been
6 reviewed by a district court judge in the Eastern
7 District of Virginia and that that judge has ruled that
8 it did in fact comply with Rule 41, and that the
9 magistrate judge did have the authority to issue that
10 warrant, but I was not involved in the -- in any
11 conversation where we debated whether we should go to a
12 magistrate or a district court judge. I don't know that
13 any conversation like that took place.

14 Q. Do you personally, or to your knowledge, does the
15 FBI collectively or law enforcement collectively have
16 any knowledge or information that this NIT has returned
17 information to law enforcement that was categorically
18 outside the half-dozen or so specific items that were
19 represented to the magistrate judge would be collected?

20 A. No. The only information -- the entirety of the
21 information that was collected, certainly the matter at
22 hand, has been turned over to the defense.

23 I've also reviewed the information that was
24 collected in numerous other cases. In fact, I have
25 access to the entire database of information that was

1 collected. It did not collect, in any instance,
2 information that was not identified in the attachment to
3 that search warrant.

4 Q. Was the code of the NIT written, to your knowledge,
5 in such a way that it would have to go room to room
6 throughout the computer looking for these half-dozen
7 different items of information and search through and
8 rummage through all of the files of the computer; or is
9 this information that has been categorically described
10 information that is stored in very discrete, specific
11 areas on a computer such that those specific cubbyholes
12 can be opened, recovered, and passed back; or did they
13 have to rummage through the whole house to find them?

14 A. No, it would be similar to how the second
15 description. There are very simple computer commands
16 that would -- that essentially say send the MAC address,
17 send the operating system, send the username. It didn't
18 go searching through the computer.

19 The NIT was designed in such a manner that it
20 could only collect and report the information
21 identified. It did not have the capability or give the
22 government the capability to rummage through files on
23 the computer. We had no ability to look at what files
24 they had on there, legal or illegal. It did not have
25 the ability to search the content of the computer. It

1 could only execute the very simple commands that have
2 been -- all of those commands also have been turned over
3 to the defense.

4 They showed me a preview of an exhibit of that
5 code and so that code is what was run on the defendant's
6 computer, and it could only return the information
7 identified in the warrant attachment.

8 Q. As I understand it, the NIT is -- you had authority
9 to deploy the NIT that was broader than the actual way
10 in which it was actually deployed?

11 A. Yes, your Honor.

12 Q. The authority that you sought and received to deploy
13 the NIT would have allowed you to obtain the categorical
14 information only upon, but as soon as the user entered,
15 correctly entered their username something password?

16 A. That's correct, your Honor.

17 Q. As a matter of how it actually works, help me
18 understand. When a user puts in their username and
19 password and gets access to the Playpen website, then
20 their computer is communicating over the Internet with
21 the Playpen server. Is that correct?

22 A. Yes, your Honor. After the user logs in to the
23 website, they are communicating with the server in the
24 Eastern District of Virginia through the Tor network.

25 Q. And understanding that how it was actually used was

1 more narrow than what you had authority, but as you have
2 described, the NIT was actually deployed when a specific
3 forum or subforum was opened by a user. Is that right?

4 A. In general, the NIT was only triggered when the user
5 not just accessed the forum but actually opened a post
6 within that forum.

7 Q. All right. So they open up a post; the NIT is
8 deployed. Is the categorical information that the NIT
9 harvests and sends back to the FBI something that is
10 instantaneously done, or if not instantaneous, something
11 that occurs while the two computers, the user and the
12 host computers, are communicating with each other in
13 that session?

14 A. It's done very quickly. As soon as a user clicks on
15 the post, they begin downloading the material from that
16 post. Additionally they download the NIT instructions
17 to their computer, and while the post is still, is
18 downloading, the NIT does its business and sends the
19 information back to the FBI.

20 This happens very quickly. In the matter at
21 hand, the entire transmission generated by the NIT took
22 place in approximately .27 seconds. Again, it happened
23 very quickly because it was just transferring a very
24 limited amount of information.

25 Q. And let's say that it could do it within -- it could

1 harvest and send back the information within .27
2 seconds. Is that .27 seconds, does that necessarily
3 occur while the two computers are still communicating
4 with each other, while the user is downloading or
5 viewing or whatever in that session?

6 A. Yes, it occurs while they are actively on the
7 website. So they would click on the post on the website
8 and then the NIT would be triggered and deploy and
9 likely complete its task before that page even fully
10 loads.

11 It does not happen later after -- nothing is
12 resident on the user's computer. There's no code left
13 behind. There's no data changes made to it. It happens
14 immediately and then there's nothing left behind on the
15 user's computer.

16 Q. Help me understand whether this analogy would be
17 proper or not. If you were attempting to gain someone's
18 phone number who was calling another phone, obviously at
19 some point caller ID was invented, and shortly after
20 that, something -- I think it's *69 or something, a user
21 can punch that code in and prevent their phone from
22 sending out their phone number on caller ID so that the
23 recipient of the phone call just sees "blocked call" or
24 no name/no number or whatever.

25 Is there any similarity, if that was the

1 objective of the investigation here in the FBI
2 developing some override that, while the two people were
3 talking on the phone, would go to their phone, override
4 the *69 feature and send the number that was being
5 called from, is that -- is that analogy on par with what
6 happened or --

7 A. I think that's a fair analogy, your Honor.

8 Q. Okay. So it's not like you pick up the phone, call
9 the number that's being monitored, a NIT is deployed and
10 ten minutes after the call or ten days after the call,
11 the NIT responds?

12 A. No, your Honor. Per your first analogy, the user,
13 the defendant in this case, has to log in to the
14 website, or call us. They have to initiate that
15 communication with us and then the NIT communication
16 happens during that.

17 We have no -- again, because before the NIT
18 provides us with the IP address, we have no identifying
19 information about the user. So we have no ability to
20 just send the NIT out to them. They have to communicate
21 to us first in the matter at hand, access the website,
22 attempt to download child pornography.

23 Q. And it's designed such that that information is
24 harvested and relayed back while the user is still
25 online with the host server?

1 A. Yes, your Honor.

2 Q. So the first step and purpose of the NIT warrant
3 was, among other categorical items, to obtain the IP
4 address. Is that right?

5 A. That is the most important piece of information that
6 was collected, yes, your Honor.

7 Q. The second step in finding a particular individual
8 would be to -- I mean, some information from the actual
9 numbering methodology tells you who the Internet service
10 provider is so you know who to subpoena?

11 A. Yes, your Honor.

12 Q. And so you subpoena a particular Internet service
13 provider for the name of the person to whom that IP
14 address has been assigned?

15 A. Yes, your Honor.

16 Q. When you submit that subpoena, what -- of the
17 half-dozen or so categorical pieces of information that
18 the NIT harvested, what other information is used to
19 process and provide with the subpoena to the Internet
20 service provider?

21 A. Generally just the IP address and the date and time
22 that we are interested in. So it would be the IP
23 address and the date and time that that IP address
24 transmitted the information collected by the NIT.

25 Q. So if we think of these steps, these different steps

1 that the investigators use to go from an anonymous user
2 to a somewhat anonymous IP address to the particular
3 individual, as we work through those links in the chain,
4 the only two pieces of information that flow through to
5 the administrative subpoena which could then be used to
6 harvest fruits through yet another residential search
7 warrant, the only two pieces of information that
8 actually flow through each step would be the IP address
9 and the date and time?

10 A. Yes, that's correct, your Honor.

11 Q. So while it's interesting and may help --
12 potentially help with proof at trial if there were
13 multiple computers utilizing the same wi-fi network in a
14 house, for purposes of determining what is the fruit of
15 which branch of the tree, these other pieces of --
16 categorical pieces of information that were harvested by
17 the NIT are really unnecessary in the administrative
18 subpoena and the residential subpoena?

19 A. That's correct, your Honor. With just the IP
20 address alone, we still eventually get to the
21 defendant's residence.

22 Q. All right.

23 THE COURT: Does that prompt anything further
24 by the government?

25 MR. DEAN: Not from the government, your Honor.

1 THE COURT: Mr. Alfaro?

2 MR. ALFARO: I do have a few questions.

3 THE COURT: All right.

4 CROSS-EXAMINATION

5 BY MR. ALFARO:

6 Q. We're talking about sending information over the
7 Internet, correct?

8 A. Yes.

9 Q. Does the FBI encrypt its websites?

10 A. I'm sorry. Could you clarify the question?

11 MR. DEAN: Objection. I don't see how this is
12 relevant to the motion TO suppress.

13 MR. ALFARO: I'll connect it in a few
14 questions, Judge.

15 THE COURT: Better get there quick.

16 (By Mr. Alfaro:)

17 Q. Are there benefits for sending information through
18 the Internet on an encrypted connection?

19 A. In some instances, yes.

20 Q. Does that prevent from tampering?

21 A. It can help, but it does not prevent it, not
22 entirely.

23 Q. Does it make it less likely?

24 A. In some instances, yes.

25 Q. Was the NIT sent back -- when it was collected from

1 the defendant's computer and sent back to Virginia, was
2 that sent over an encrypted network? That's a yes or
3 no.

4 A. The -- sorry then. Can you repeat the question? I
5 didn't hear if you said encrypted or unencrypted.

6 Q. Yes, agent.

7 The information that was collected by the NIT,
8 was it sent back over an encrypted network?

9 A. No. It was sent in clear text over the regular
10 Internet.

11 Q. Did the NIT collect the IP address from the
12 computer?

13 A. As I stated during my direct, the NIT collects the
14 information from the computer and then sends it back to
15 the government, and the government can see what IP
16 address that information originates from.

17 Q. So the NIT sees the IP address from, directly from
18 the computer, from Mr. Jean's computer?

19 A. From a very low-level technical perspective, no; in
20 a high level, yes. So I would need you to be more
21 specific in your question.

22 Q. Would I be correct in saying that it only got --
23 that it got the IP address from whatever it was
24 receiving from the NIT? From whatever the NIT was
25 coming back from, whatever IP address the NIT was coming

1 back from, that's the IP address that you're utilizing?

2 A. Yes. We saw the IP address that transmitted the
3 information collected by the NIT.

4 MR. ALFARO: May I have one second?

5 That's all I have, Judge. Thank you.

6 MR. DEAN: Nothing, your Honor.

7 EXAMINATION

8 BY THE COURT:

9 Q. Does the NIT code, is that attached to the file that
10 the user is downloading, or is it sent separately?

11 A. It's sent separately, your Honor. So the user
12 starts downloading that particular page of the website,
13 and in addition to that page of the website, the NIT
14 code is sent through that same connection.

15 Q. All right. Thank you.

16 THE COURT: You may stand down, agent. We're
17 going to be in recess for 15 minutes.

18 THE WITNESS: Thank your Honor.

19 (Recess from 3:20 p.m. to 3:35 p.m.)

20 THE COURT: Any other witnesses the government
21 would like to call?

22 MR. DEAN: Your Honor, I would like to recall
23 Special Agent Alfin for just one brief question.

24 THE COURT: All right.

25 MR. DEAN: The government calls Agent Alfin.

1 THE COURT: You're still under oath.

2 REDIRECT EXAMINATION

3 BY MR. DEAN:

4 Q. Special Agent Alfin, why was the information that
5 was sent back from Mr. Jean's computer as a result of
6 the NIT not encrypted?

7 A. For a number of reasons. The first reason is that
8 because the data sent by the NIT was not encrypted, it
9 was collected in a forensically sound manner. So the
10 exact same evidence that we collected that came from
11 Mr. Jean's computer was turned over to defense.

12 It is not redacted. It contains the full data
13 transmission as a result of the deployment of the NIT.
14 You can break it down, you can analyze it, and you can
15 see the information that the NIT collected; you can see
16 the IP address.

17 The importance of this is that because it was
18 done in a clear text, unencrypted manner, it is, again,
19 forensically valid and can be analyzed without having to
20 make any alterations to the data.

21 Additionally, the concern of encryption was
22 raised earlier, and in the matter at hand, it is not a
23 concern. I stated previously that I know that the data
24 was not tampered with, and I know that for a number of
25 reasons.

1 As stated previously, encryption can in some
2 circumstances help prevent data tampering. However, in
3 the matter at hand, it would not have been useful, the
4 reason for that being in order for an individual to have
5 tampered with or altered the data from the NIT, that
6 individual would have had to have known a number of
7 things and had a number of capabilities.

8 First of all, that individual would have had to
9 have known about the FBI operation. They would have had
10 to have known that the FBI took control of the Playpen
11 website and that the FBI was using a NIT to identify
12 members of the Playpen website.

13 The operation was not discovered and publicly
14 reported on until months after its conclusion. So I
15 know that there was no entity outside of the FBI who
16 knew that.

17 However, in addition to knowing about the NIT,
18 about the FBI's operation, they would have also had to
19 have known how the NIT was configured and how it was
20 deployed.

21 In addition to that, they would have had to
22 have previous knowledge that the defendant was a member
23 of the Playpen website. They would have had to have
24 known that Mr. Jean was regalbegal. They would have
25 also had to have had access to Mr. Jean's computer to

1 know his MAC address, to know his computer's hostname
2 and username. They would have had to have known all
3 these things. They also would have had to have had the
4 capability to have received and altered the data in
5 transit from Mr. Jean's computer to the FBI without
6 being detected.

7 There is no individual or entity that could
8 have known all these things and could have had access to
9 all the various technologies that they would have needed
10 to have access to, and for that reason the data that was
11 not -- the data that was sent by the NIT was not
12 encrypted. That was a forensically sound choice, and I
13 know based on my training and experience and the reasons
14 stated earlier that the data was not tampered with in
15 transit.

16 Q. Thank you for clearing that up.

17 MR. DEAN: That's all I have, your Honor.

18 THE COURT: Thank you, Mr. Dean.

19 Does that prompt anything further, Mr. Alfaro?

20 MR. ALFARO: No, your Honor.

21 THE COURT: May this witness stand down?

22 MR. DEAN: Yes, your Honor.

23 THE COURT: Agent, you may stand down.

24 THE WITNESS: Thank you, your Honor.

25 THE COURT: Anything further, Mr. Dean?

1 MR. DEAN: No, your Honor.

2 THE COURT: All right. Mr. Alfaro, you may
3 call any witnesses you'd like.

4 MR. ALFARO: Defense calls Dr. Christopher
5 Soghoian.

6 THE COURT: Sir, if you'd please pause about
7 right there and raise your right hand.

8 (Whereupon, the witness was duly sworn.)

9 THE COURT: All right, sir. If you'd please
10 have a seat in our witness box.

11 You may inquire.

12 MR. ALFARO: Thank your Honor.

13 CHRISTOPHER SOGHOIAN, Ph.D.,
14 having been first duly sworn, testified as follows:

15 **DIRECT EXAMINATION**

16 BY MR. ALFARO:

17 Q. Sir, can you please state your name and spell your
18 last name.

19 A. Yes. My name is Christopher Soghoian,
20 S-o-g-h-o-i-a-n.

21 Q. Mr. Soghoian, where are you employed?

22 A. I am employed at the American Civil Liberties Union.
23 I am the principal technologist for the ACLU's Speech,
24 Privacy and Technology project.

25 Q. Are you appearing today in your personal capacity?

1 A. Yes. I am here not representing the ACLU. I'm
2 actually taking a day off from work to be here.

3 Q. Are you being paid to give testimony today?

4 A. No. I am volunteering, and I've declined the expert
5 fee that you were able to offer me.

6 Q. Are we paying your travel expenses?

7 A. You're covering my flight, my hotel and my food, but
8 I'm not getting any kind of expert compensation.

9 Q. Can you briefly explain your education and training
10 experience?

11 A. I have a bachelor's degree in computer science from
12 James Madison University; I have a master's degree in
13 security informatics, which is computer security, from
14 the Johns Hopkins University; and I have a Ph.D. degree
15 from Indiana University which is focused on law and
16 technology.

17 I've also researched surveillance and
18 technology and cyber security for a number of years, and
19 my research has been published in leading law journals,
20 and I've been -- my research has been cited by a number
21 of federal courts, including the Ninth Circuit and also
22 the Massachusetts and New Jersey state supreme courts.

23 Q. Have you testified in other court proceedings?

24 A. I testified in the Michaud case in Washington State
25 earlier this year. That was my first time. This is my

1 second time testifying in federal court.

2 Q. Have you testified in any other type of legal arena?

3 A. I've testified as an expert at three state
4 legislative bodies and before the European parliament
5 but in no other judicial proceeding.

6 Q. Have you testified before the Federal Rules of
7 Criminal Procedure committee?

8 A. Yes. The advisory committee that sets the criminal
9 rules, I testified there, I believe in the fall of 2014,
10 in their proceeding that was evaluating changes to Rule
11 41 proposed by the Department of Justice that would have
12 expanded their authority to use NITs.

13 Q. You testified -- you stated you testified in the
14 Michaud case. I just want to clear up. Is that related
15 to the same warrant in this case?

16 A. That was the same NIT warrant, not the same home
17 search warrant, but it was the same NIT warrant
18 authorized in Virginia.

19 Q. Do you have experience training judges?

20 A. I've spoken at several events organized by the
21 Federal Judicial Center and will be speaking at another
22 one next month in San Diego. And at those events, I
23 have spoken about surveillance technology and NITs in
24 particular.

25 Q. As a consultant in Mr. Jean's case, have you

1 reviewed the materials related to his case?

2 A. Yes. I have reviewed search warrants, affidavits.
3 I've also reviewed the code for the NIT that the
4 government turned over and the two-way network data
5 recording also that the government provided.

6 Q. The judge was informed about what the Tor browser or
7 Tor network does. Can you in your own words very
8 briefly describe what it is and how it works?

9 A. Sure. I think Special Agent Alfin's description of
10 how the Tor network works was pretty accurate, but the
11 Tor browser is a special-purpose tool that lets you
12 browse the Internet through Tor.

13 It is actually a modified version of Firefox
14 that has been modified to be even more secure. The Tor
15 browser is designed not just to access websites on the
16 Tor network but is specifically designed to protect the
17 user of Tor from attempts to identify that user.

18 So, whereas, a normal Web browser will let you
19 experience the richness of the Web and view multimedia
20 and watch videos, the Tor browser has a reduced set of
21 functionality in order to protect users from techniques
22 that might seek to identify them. So that's the Tor
23 browser.

24 The Tor network, as Special Agent Alfin
25 described, really you can do two things. One is you can

1 access websites on the regular Internet, and by using
2 the Tor browser through the Tor network, you essentially
3 bounce your connections through a bunch of servers that
4 are run by volunteers, and in doing so, you mask your
5 true location.

6 You can also access what are called hidden
7 servers, or hidden services, that can only be accessed
8 through Tor. And when you use a hidden service, both
9 the location of the user and the location of the service
10 are kept hidden from all other parties.

11 Q. Does the government use Tor?

12 A. So my understanding is that the government uses Tor.
13 I mean, the government is obviously a big entity. The
14 Naval Research Lab created Tor. There are still, I
15 think, three or four people employed full time by the
16 Naval Research Lab who do nothing but work on
17 improvements to Tor.

18 The state department and the defense department
19 have been TOR's largest funders and continued to fund
20 Tor, and I know a number of federal agencies use Tor for
21 investigative reasons.

22 The reason that the Navy created Tor was they
23 wanted a way for naval investigators to do covert
24 investigations without revealing to the world that
25 someone was being investigated by the Navy. They knew

1 that to be able to hide their tracks, they would need to
2 be able to blend into a crowd and so the people who
3 created Tor have an expression, which is that anonymity
4 loves company. So they created this free network in
5 order to provide a way for government employees to hide
6 their activities, but in doing so, they knew that a lot
7 of other people would also join the network.

8 Q. You heard Agent Alfin testify on direct earlier that
9 given the nature of the Tor network and the website, it
10 was impossible for someone to stumble onto the Playpen
11 site. Do you have an opinion about that?

12 MR. DEAN: Objection. I think that
13 mischaracterizes what the witness said. I think he said
14 it would be nearly impossible or very difficult. He
15 wasn't completely 100 percent.

16 THE COURT: All right. The Court is going to
17 strike Mr. Alfaro's characterization of the earlier
18 testimony, and the latter part of his question about his
19 opinion stands.

20 (By Mr. Alfaro:)

21 Q. Can I ask the question this way: Do you have an
22 opinion on Agent Alfin's statement that it was nearly
23 impossible for someone to stumble on this type of
24 website?

25 A. I do have an opinion. So from reading the documents

1 in this case and from listening to Special Agent Alfin's
2 testimony, it is clear that prior to the government
3 taking over the site, the site had been misconfigured.

4 So normally one would expect that a website
5 that is attempting to hide its existence or its location
6 from authorities in all countries would only be
7 accessible through Tor, but the server administrator who
8 was running that site had not configured the site
9 correctly.

10 Q. What do you mean when you say "configure"?

11 A. Essentially a website that is accessible through Tor
12 still has an Internet connection because Tor goes on top
13 of the regular Internet connection.

14 Because of a misconfiguration that essentially
15 the server administrator did not check the right boxes
16 or edit the right configuration options when he was
17 setting up the service, because it was misconfigured,
18 for some period of time the website was both accessible
19 through Tor but also through the regular Internet, which
20 meant that for some period of time, had you known the
21 real IP address of the Playpen site and typed it into
22 your Web browser, you would have seen the homepage that
23 was one of the prosecution exhibits.

24 Q. Today we've been discussing what the government is
25 calling a NIT, or N-I-T, or network investigative

1 technique. Do you have experience in researching what
2 the government has identified as a NIT?

3 A. I do. I have been researching NITs probably for
4 three or four years now. What we know is that the FBI
5 has used software like a NIT and then eventually called
6 a NIT since about 2002.

7 The first public use of a NIT by the government
8 was in 2007, but it's only really been since 2013 or
9 2014 that the public has learned a little bit more about
10 this. There are about a half-dozen public warrant
11 applications for NITs or the predecessor technology that
12 are public, and I've read all of those and I've reviewed
13 those.

14 I have spoken to former government employees
15 who are -- who worked in the team that delivers NITs. I
16 have researched this. I've spoken to a lot of people
17 involved to try and figure out how NITs work, how the
18 government uses them and what the legal rules are that
19 they follow when using this surveillance technology.

20 Q. Have you reviewed the warrant application for the
21 NIT in this case and subsequent declarations by Agent
22 Alfin describing the NIT?

23 A. I have reviewed the February 20th application and
24 warrant. I've also read many, many documents that Agent
25 Alfin has either written or transcripts of his testimony

1 in various cases around the Playpen operation.

2 Q. Based on your research and experience and your
3 review of these documents related to this case and
4 others, can you explain in your understanding step by
5 step how the NIT worked, how the information was seized
6 from the computer?

7 A. Sure. So as I said before, the Tor browser is
8 designed to do one thing more than anything else and
9 that is to protect the IP address. This is the most
10 sensitive thing because the whole purpose of Tor is to
11 protect the location and identity of the user.

12 Normally a website that a user visits, if they
13 are using the Tor browser and the website asks for the
14 user's IP address, the Tor browser will refuse to
15 provide that information. It has been designed to not
16 only reject requests but designed to reject attempts to
17 get around that. It is a hard-end browser.

18 And so the first step for the government in
19 utilizing the NIT was to somehow get the many thousands
20 of people who visited the Playpen site and who were
21 compromised with the government's code, the first step
22 was in getting their computers to accept this -- to
23 accept and run this code that would reveal their
24 location.

25 Q. How would that first step work?

1 A. So as Special Agent Alfin described, people would
2 visit the Playpen site. While visiting one or more
3 pages on that site, they would be given some code in the
4 background. So this was not something that the user
5 would see. It would happen behind the scenes.

6 You know, I do want to quibble with a couple
7 things that he said, but in general, there are flaws in
8 all software that exist because the people who write
9 software are humans, and humans make mistakes.

10 Some humans make more mistakes than others, but
11 no engineer is perfect, and Web browsers are extremely
12 complicated pieces of software, millions of lines of
13 code, and so the people who write that software,
14 although they try really hard to build as secure a piece
15 of software as possible, they make mistakes.

16 Q. Are these mistakes that you're referring to, in your
17 training and your experience that you have, are they
18 fairly common, even in advanced users?

19 A. There is no software that is 100 percent secure. As
20 much as we would like secure software to exist, it does
21 not, and that is the reason why foreign governments and
22 criminals are able to hack into well-resourced
23 organizations including, you know, the U.S. Government
24 and the Office of Personnel Management. It's really
25 hard to design secure software and to set it up

1 correctly.

2 The Tor browser and the Tor network, it's about
3 ten years old, and it's received millions of dollars of
4 U.S. Government funding, but it's still not perfect. In
5 essence, there are flaws in the Tor browser, there are
6 flaws that have been exploited in the past by the
7 government, by criminals, by foreign governments, and
8 using one or more flaws, the government was able to --
9 well, let me pause.

10 The government wrote special software which
11 experts call a exploit that exploited a vulnerability in
12 the Tor browser. Essentially there was some kind of
13 design flaw in the Tor browser, and when given
14 particular custom computer instructions, the government
15 could get the Tor browser to do things that it wouldn't
16 normally do.

17 So if you think of the Tor browser as having
18 some guard dogs, sort of keeping guard around the house,
19 the government maybe fed the dogs some drugged meat to
20 make the dogs go to sleep so that the government could
21 then go inside the house.

22 Q. This exploit code that's prepared by the government,
23 is it possible that there's human error in that code?

24 A. So just as the engineers who wrote the Firefox
25 browser, which the Tor browser's based on, just as they

1 are not perfect humans and they make mistakes, so too
2 are the engineers who probably work for defense
3 contractor that the FBI employed, they, too, may have
4 made mistakes, and some of these mistakes could be
5 subtle.

6 You know, sometimes you have software that
7 crashes every time you run it; sometimes you have
8 software that crashes one in a hundred times or one in a
9 thousand times.

10 You know, we had -- you may remember 16 years
11 ago there was the year 2000 concern where everyone was
12 worried that on the year 2000, all the software in the
13 world would crash because it hadn't been designed with
14 four-digit dates in mind.

15 So, you know, December 31st, the software was
16 fine, and if you'd run it a million times, it would have
17 been fine. But people were worried the next day, the
18 moment that the clock struck midnight, the software
19 would crash. And so it's really, really hard not just
20 to write secure software, to write correct software, but
21 it's really hard to test software to look for those
22 flaws.

23 And just as there are a team of engineers at
24 Mozilla and the Tor Project who make the software, they
25 also employ people who do nothing but test and look for

1 flaws, and they still miss mistakes. They still miss
2 the flaws.

3 Q. What would be the next step then in this NIT
4 process?

5 A. So you deliver the exploit to the Web browser, to
6 the Tor browser. If it successfully runs, then you can
7 feed it what some experts might call a second stage. So
8 you would then give it the code that you want to run.

9 And I'll pause and say, you know, there has
10 been some disagreement that you've heard in this
11 courtroom about whether the NIT is malware. You know,
12 the government says one thing; experts say another.
13 Malware is a term of art among computer security
14 experts.

15 The government has said that the NIT is a
16 certain thing, and that's the government's right because
17 they came up with the term "NIT." They defined this
18 term. They came -- they were the ones who first used
19 it. As I understand what the government means when they
20 say "NIT," that was the next piece of code that was
21 delivered to the computer.

22 So after the exploit had gained the ability to
23 get the computer to run instructions that it would not
24 normally run, then the NIT was delivered, and the
25 purpose of the NIT was to collect information from that

1 computer, such as the MAC address, such as the operating
2 system version, and then to contact their server in
3 Virginia and transmit back to that information.

4 Q. So when you say it's collecting the information, is
5 that process going on on the server in Virginia, or is
6 it going on in the defendant's computer in Arkansas?

7 A. The defendant's computer would have downloaded the
8 NIT from the Playpen site -- well, first, it would have
9 downloaded the exploit, then it would have downloaded
10 the NIT, then it would have -- well, sorry. Let me
11 start again.

12 It would have downloaded the exploit; it would
13 have run the exploit. Then it would have downloaded the
14 NIT; it would have run the NIT. The NIT would have done
15 its thing, collect the information and then sent it back
16 to Virginia.

17 All of the collection, the search, if you will,
18 that would have taken place on the computer that ran the
19 NIT, which is the defendant's computer. The NIT code
20 never ran on the server that the government operated.
21 The server provided the code to the defendant's
22 computer, but the defendant -- the NIT ran on the
23 defendant's computer.

24 Q. You testified that you reviewed the NIT warrant.
25 I'm approaching you with what's been marked as

1 Defendant's Exhibit B submitted in a motion, which is a
2 copy of the NIT warrant describing what it does. And
3 I'll direct you to Pages 23 and 24.

4 A. Okay.

5 Q. Have you read those paragraphs, 31, 32, 33,
6 describing what the NIT does?

7 A. Yes, I have.

8 Q. Can you, in brief layman's terms, tell us what it
9 says in, I guess, layman's terms?

10 A. So Paragraph 23 -- sorry. Paragraphs 31, 32 and 33
11 in the NIT warrant application really describe what the
12 government intends to do with the NIT. So they say
13 we're going to send some computer instructions to the
14 defendant's computer; we're going to collect some
15 information --

16 MR. DEAN: Your Honor, I'm going to object
17 based on foundation. You have lay witness that's
18 talking about legal terms in a search warrant.

19 MR. ALFARO: Judge, he's an expert witness
20 talking about computer terms in a warrant that he's
21 already reviewed numerous times.

22 THE COURT: Well, my understanding of what he's
23 being asked is to look at the paragraphs that have been
24 identified and to explain from a technology standpoint
25 the steps that are taking place. If that's not the

1 question, then rephrase.

2 MR. ALFARO: That's the question, Judge.

3 THE COURT: All right. Objection overruled.

4 A. So the paragraphs 32 and 33, they are really, what
5 they are saying is that the -- that this computer code
6 will be delivered to the people who visit the site and
7 that computer code will cause certain things to be
8 collected from that computer. And those things that
9 will be collected are actually enumerated on Page 25.
10 So it says the unique identifier that's been sent by the
11 NIT. It's the --

12 Q. Let's stop right there.

13 A. Sorry.

14 Q. What's the unique identifier?

15 A. So there are a few pieces of information that the
16 NIT has and sends back to the government. One of them
17 is a unique identifier that is given to the NIT when the
18 user visits the Playpen site and then that identifier's
19 transmitted back by that computer to the government
20 server.

21 You can sort of think of it as, I guess, a
22 serial number for the individual user. It's a way of
23 the government keeping track and saying this person
24 visited the site; we heard from the NIT later; we think
25 it's the same person.

1 Q. Okay.

2 A. So the NIT receives this unique identifying number
3 from the government and then sends it back. The NIT
4 also collects the MAC address, and I think Special Agent
5 Alfin's description of the MAC was pretty good here.
6 It's a serial number burned in the factory into either a
7 wi-fi card or a network card.

8 And then there's also the username, which is
9 the name that you log in to the computer with and some
10 information about the operating system. So are you
11 using Windows, do you have a Mac, are you using Linux.

12 So those are the pieces of information. And
13 then there's the IP address, which is a little bit more
14 complicated.

15 Q. But before we get to that question.

16 A. Okay.

17 Q. Is there anything that's not in the warrant
18 describing the NIT that, in your training and experience
19 with these NITs, that's important?

20 A. So the NIT application asks for permission -- asks
21 for a warrant authorizing the delivery of a NIT. But
22 the NIT application does not ask for permission to
23 deliver the exploit.

24 So if you think of the NIT being the software
25 that does the search, the exploit is the software that

1 kicks down the front door.

2 There's nothing in this warrant application
3 that either a layperson or even a person skilled in the
4 art could look at and say this is how the government is
5 going to get into the target computer.

6 And we've seen this issue, this lack of a
7 description of the method of entry, come up before. In
8 the 2007 case that I talked about, the first time the
9 government used -- or the first time we know that the
10 government used software like a NIT, in that case in
11 Timberline, Washington, we later learned that the
12 government impersonated the Associated Press in an
13 effort to trick a teenager into downloading malware onto
14 his computer. This is a teenager who was calling in
15 bomb threats and didn't want to take an exam at school.

16 Q. In that case, is that case cited by the government
17 in its brief?

18 A. It was, yes.

19 So in that 2007 case, the warrant application,
20 like the Playpen warrant, described the information that
21 would be collected. What was missing, though, was
22 information about how the government was going to get
23 the code onto the computer and get it to run. And, you
24 know, there are a lot of people who think that that is
25 important information that a Court should get to see.

1 Certainly after it was revealed in 2014 that
2 the FBI had impersonated the Associated Press -- that
3 was an extremely controversial topic -- about a dozen or
4 more news organizations complained and the Senate
5 judiciary committee even opened an investigation into
6 that practice. The FBI director ended up writing a
7 letter to the New York Times to defend the practice.

8 You know, in the Playpen case, what's missing
9 here really is language telling the judge that the
10 government intends to send computer code over the
11 Internet to thousands of people that will bypass, or
12 exploit, a security flaw in the Tor browser and that
13 this software is pretty dangerous. That is, if the
14 software were to somehow get into the wrong hands, it
15 could be used by other people to break into Firefox
16 browsers of innocent law-abiding people, and there are
17 hundreds of millions of people using Firefox.

18 You know, I think there's an important question
19 as to, you know, whether the NIT is an appropriate tool,
20 but I think we should all want the Courts to be told as
21 much information as possible so that judges can evaluate
22 the facts before them and say, is this an okay
23 technology or technique to use, and the Playpen warrant
24 application doesn't tell the judge how the government's
25 going to the deliver -- how they are going to get the

1 NIT onto the computer of the defendant. They don't tell
2 the judge what risk there is of hitting innocent people.

3 In a 2013 case, a magistrate judge in Texas
4 declined to authorize a NIT because he was concerned
5 that the government hadn't articulated what they were
6 going to do to make sure that innocent people weren't
7 going to be hit with a NIT.

8 Q. Is that the In Re: Warrant case that you're
9 referring to?

10 A. Yes, from Magistrate Judge Smith in Houston.

11 Q. Based upon your review of the documents in this case
12 and other similar cases, if the NIT had not been sent to
13 the computer in Arkansas and collected this information,
14 would the website otherwise have been able to transmit
15 that information to the FBI?

16 A. The FBI apparently a year and a half ago worked with
17 Carnegie Mellon to identify users who were visiting some
18 Tor websites, but we think that that -- and by "we," I
19 mean the computer science community thinks that that
20 flaw was fixed.

21 I think without the NIT used in this case, it
22 would have been extremely difficult for the FBI to
23 identify people visiting the Playpen site.

24 And to be clear, they could have used a
25 different exploit and they could have used a different

1 NIT, but without hacking the people visiting the site,
2 it would have been very hard.

3 Q. You mentioned a few cases that you're familiar with
4 in your research in which the government hasn't been too
5 forthcoming as far as how it's using these tools when
6 they are putting this information in warrants for
7 judges.

8 You talked about a 2007 case. Is there another
9 case involving Tor that you're familiar with?

10 A. Another case involving Tor?

11 Q. Or the Tor browser?

12 A. So -- oh, yes. Sorry. So there have been three --
13 let me pause and say there are two sort of ways that the
14 government might deliver a NIT. The first is what we
15 might call a targeted operation where they are going
16 after one person. Maybe they know the name of that
17 person, maybe they don't, but they are going after one
18 person. It's a targeted operation.

19 The second would be a scenario like the Playpen
20 case where they are really looking for a bunch of
21 people. They don't know their names, but they want to
22 get all the people who visit a site.

23 The term of art in the computer science
24 community for that kind of attack or that kind of
25 operation, particularly when done by foreign governments

1 or criminals, is a watering hole attack. And
2 essentially, you know, if you are a lion in the savannah
3 and you want to eat, what do you do? You go to the
4 watering hole to hunt because that's where all the other
5 animals are drinking.

6 We know of three watering hole operations to
7 date where the FBI employed a NIT to target large
8 numbers of people who are visiting sites. The first was
9 a case out of Nebraska in 2012 which is called Operation
10 Torpedo, and the second was an operation --

11 MR. DEAN: Your Honor, relevance.

12 MR. ALFARO: Your Honor, one of the arguments
13 that we're making in our case is if the Court were to
14 rule in our favor that there was a 41(b) violation, one
15 of the things we would have to show is reckless
16 disregard of proper procedure.

17 So if the government has a history of
18 misrepresenting information or at least inadvertently
19 keeping the Court in the dark, if we're able to at least
20 lay some sort of argument that this has been going on
21 for several years, that goes to whether the government
22 is aware of the issues and whether they're correcting
23 them or whether they are continuing to keep the judges
24 in the dark by not explaining the nature of this
25 technology.

1 MR. DEAN: Your Honor, all the witness is doing
2 is laying a foundation that there's been NITs deployed
3 before. There's no reckless disregard. Sometimes they
4 get granted; sometimes they get denied.

5 THE COURT: Well, I'm going to overrule the
6 objection. One thing, Mr. Alfaro, that I would like to
7 better understand is the exploit and the argument that
8 you're making that the magistrate judge was not
9 presented with the knowledge of the first step in the
10 process, which was to execute the exploit.

11 What I'm not understanding is the exploit was
12 to public interstate, so to speak. I mean, it was --
13 the Tor network is a system that anyone has free access
14 to.

15 So if you're -- if you have found a defect, you
16 know, in one part of a 1,000-mile-long public highway
17 and that is how you gain a foothold to deploy the NIT
18 that you do have authority to deploy, so what.

19 MR. ALFARO: Well, and maybe I can bring that
20 home more with --

21 THE COURT: And I'm not asking you. I'm just
22 saying in your questioning, that would be helpful to me.

23 MR. ALFARO: I'll go back to that, your Honor.
24 So we'll put a pin in this topic of the Tor cases
25 involving, I think the mail exchange that we're about to

1 get to.

2 (By Mr. Alfaro:)

3 Q. Can you explain to the Court why that would be
4 important, the exploit, why that's an important process
5 in the NIT programming, or requesting this information,
6 and the nature of the invasion, in your experience, onto
7 the defendant's computer?

8 A. It actually might be easier if you let me discuss
9 those two other Tor operations. I think it will get to
10 where you want, if that's okay.

11 So the two other watering hole operations that
12 we know of to date, one was Operation Torpedo, which was
13 a Nebraska case. The exploit that the government used
14 in that case -- let me pause.

15 There are two kinds of exploits: Those that
16 are known to the people who write the software that
17 maybe users haven't installed the latest updates. So
18 maybe you're running an out-of-date version of Microsoft
19 Office and you're vulnerable, but the people who make
20 Office at Microsoft, they know about it and they have
21 issued a fix. Those are called existing vulnerabilities
22 that are known about.

23 And then there are vulnerabilities that the
24 people who write the software don't know about, and
25 there's a special name for those and they are called

1 zero-day vulnerabilities. And zero-day vulnerabilities
2 are really powerful because even if you're running the
3 most up-to-date version of your browser software or the
4 most up-to-date version of Microsoft Office, there's
5 nothing that you can do to protect yourself. And
6 there's an entire sort of black market where people pay
7 hundreds of thousands of dollars for these exploits.

8 We don't know what kind of vulnerability the
9 government used in Playpen, but in the Operation Torpedo
10 case in 2012, the government used a old vulnerability
11 that only worked against people who are running a
12 really, really old version of the Tor browser. And
13 actually in that case once people were eventually
14 charged, the government turned over the exploit and they
15 turned over the NIT because the government had actually
16 just downloaded the exploit for free from the Internet.

17 The other notable thing about that Operation
18 Torpedo case is that the warrant application -- so in
19 the Playpen case, the warrant location says located in
20 the Eastern District of Virginia; in the Nebraska 2012
21 case, it said located in the District of Nebraska and
22 elsewhere. So in that 2012 case, the cover page
23 actually said that the NIT would be used both in the
24 state and outside.

25 Fast-forward one year and there is the -- there

1 was an operation that took place in August of 2013.
2 That was against a dark web hosting service called
3 Freedom Hosting, and what was interesting about that
4 operation is that the government got caught. Some of
5 the people who the government were targeting were
6 actually able to save a copy of the NIT and save a copy
7 of the exploit and then they published it online and
8 then computer security researchers analyzed it and saw
9 what the flaw was.

10 Now, the vulnerability that the government
11 exploited in that Freedom Hosting case, that also was
12 not a zero-day. So it only worked against people who
13 were using an old, out-of-date version of the Tor
14 browser, but there were enough people who were using old
15 software that it was effective against a decent number
16 of users.

17 The other notable thing about the Freedom
18 Hosting case is that the website that the government
19 targeted, at least one of the websites that the
20 government targeted, according to the Washington Post,
21 was a free e-mail service called Tor Mail which billed
22 itself as an anonymous e-mail service.

23 An anonymous number of law-abiding people who
24 were using Tor Mail also received the exploit and the
25 NIT which is how the exploit and the NIT were saved and

1 then subsequently published and recorded.

2 The reason why I bring this up and the reason
3 why I think it's important to disclose in the warrant
4 application both that an exploit will be used and two
5 sort of details about the circumstances is there is a
6 real risk when the government uses an exploit in a bulk
7 manner, one of these watering hole attacks where
8 thousands or tens of thousands or 100,000 people are
9 targeted, there's a real risk that the government may --
10 that the copy of the exploit may be saved and may be
11 subsequently published online.

12 If it is a zero-day exploit, if the exploit is
13 not known to Firefox who make -- or the Mozilla people
14 who make Firefox, if that information is put out there,
15 there's going to be a period of time where the hundreds
16 of millions of people who use Firefox, they're all at
17 risk. And we've seen this, the situation, play out.

18 A couple years ago the U.S. Government, in
19 collaboration with Israel, hacked into an Iranian
20 nuclear facility. This was a piece of software called
21 Stuxnet. I think there are many good reasons for the
22 U.S. Government to hack into the Iranian nuclear
23 program, but after they were caught, the software was
24 analyzed and the zero-day vulnerabilities, the zero-day
25 exploits, were published.

1 And Microsoft didn't know about them yet,
2 Microsoft hadn't patched them yet, and for months
3 criminals started hacking into innocent people's
4 computers using those exploits that had been sort of
5 inadvertently disclosed to the world by the U.S.
6 Government.

7 So I'm not saying that the FBI shouldn't use
8 zero-days, I'm not saying that they shouldn't use NITs,
9 but I do think that when the government uses an exploit,
10 particularly a zero-day exploit where hundreds of
11 millions of people are vulnerable, the judge who's
12 receiving that warrant application really needs to be
13 told what the risks are if that exploit somehow falls
14 into the wrong hands. And, you know, if the government
15 hacks one person, there's a very, very small chance that
16 exploit will be getting out into the wild.

17 But if you send the exploit to 100,000 people,
18 there's a pretty good chance that someone is going to
19 be -- there's going to be a technically sophisticated
20 user on that site who won't be compromised, who will
21 save a copy and will publish it, and that's exactly what
22 happened in that 2013 Freedom Hosting operation.

23 Does that help to answer your question, sir?

24 THE COURT: Well, it does. I just don't
25 understand the relevance to the defense position

1 because -- as it relates to the validity of the warrant
2 because let me ask you this: Had the FBI wanted to,
3 could they have added the code for the NIT to the files
4 that the users were downloading?

5 THE WITNESS: I don't -- I don't think so -- so
6 yes, the government could have delivered poisoned
7 downloads. Whether the NIT and the exploit -- sorry. I
8 see what you're asking.

9 You're saying if the government had poisoned
10 the downloads, then they wouldn't have needed an
11 exploit? They would have --

12 THE COURT: Yes.

13 THE WITNESS: That would be one way of doing
14 it. And in fact, we -- in the 2007 case where the
15 government targeted that teenager in Timberline, they
16 impersonated the Associated Press, they sent him a Word
17 document purporting to be a draft article about the
18 teenager, and said please open it up, and when he
19 double-clicked on it, it called home and revealed his
20 identity. That would have been a way for the government
21 to do that.

22 You know, I think there's a parallel here
23 between -- a really strong parallel between the
24 information that is disclosed to judges in NIT
25 applications and in a similar surveillance technology

1 called a Stingray, which is a surveillance tool that
2 tracks cellphones.

3 Stingrays have a lot of collateral risks. They
4 can jam the phones of innocent people nearby, preventing
5 them from calling their loved ones or their office or
6 whoever. They can also collect information about
7 innocent people.

8 It's only been -- you know, for 20 years the
9 government has used Stingrays, but it's only been in the
10 last few years that there has been enough public
11 information about them that now, in a new policy
12 published last year by DOJ and DHS, they have now
13 pledged to be transparent with the Courts. The DHS
14 policy stresses the importance of duty of candor.

15 THE COURT: Well, I appreciate all these policy
16 issues that we're talking about, but I think we're
17 starting to get a little far afield.

18 So, Mr. Alfaro, if you'll get back to your
19 question.

20 MR. ALFARO: Yes, sir. Thank you.

21 (By Mr. Alfaro:)

22 Q. I think we were at the point where we were
23 describing the steps of the NIT?

24 A. Yes, sir.

25 Q. I think we're towards the end. Can you describe

1 what was happening after the information was collected
2 in the State of Arkansas?

3 A. Sure. So the NIT collects certain information from
4 the computer in the State of Arkansas. It collects the
5 MAC address, which I already described; it collects the
6 operating system information; collects the username that
7 the person logged in from -- pardon me -- and then the
8 NIT makes a connection to a computer in Virginia run by
9 the government and transmits back that information.

10 Now, there's a little bit of confusion about
11 the IP address. Is this an okay time to describe that?

12 Q. Please.

13 A. So I'll be perfectly frank. You know, I looked at
14 the source code for the NIT, and it says one thing and
15 Special Agent Alfin said another. So I'm actually a bit
16 confused.

17 MR. ALFARO: May I approach, your Honor?

18 THE COURT: You may.

19 (By Mr. Alfaro:)

20 Q. I'm showing you what's been marked for
21 identification as Defendant's Exhibit H. Can you please
22 take a look at that?

23 A. Sure. So --

24 Q. First can you tell me what it is?

25 A. This is a shell script. This is -- this is

1 basically computer programming that has been written by
2 a human. It's written in English but a form of English
3 that really only nerds can really understand.

4 Q. Did we get that from the government?

5 A. The government gave us a file that could only really
6 be read by a machine, and I had to extract this from the
7 file that the government gave us.

8 Q. So what you have in your hand you extracted from the
9 data that was sent by the government?

10 A. Yes.

11 Q. And what is the data that the government sent
12 purported to be?

13 A. So the government basically gave us two things.
14 They gave us the code that collects the information from
15 targeted computer, and they gave us the code that sends
16 it home, calls home and says this is the MAC address,
17 this is the other stuff.

18 The code that I have in front of me, this is
19 just the code that collects the information from the
20 targeted computer.

21 MR. ALFARO: Your Honor, at this point I move
22 to admit defense exhibit -- I believe that was G?

23 THE WITNESS: This is H.

24 MR. ALFARO: H -- excuse me -- H, under seal.

25 MR. DEAN: No objection, your Honor, under

1 seal.

2 THE COURT: Exhibit -- Defense Exhibit H will
3 be received under seal.

4 A. So what's notable about this file, it does the kinds
5 of things that you would expect, given what has been put
6 in the warrant application. It collects the operating
7 system information, it collects the username of the
8 person on the computer, but it also collects the IP
9 address. On -- there is a bunch of code that collects
10 the IP address and then modifies the formatting, but at
11 the very end of the program, it prints out the username,
12 the operating system information and then the IP
13 address.

14 Q. So the code is designed to collect the IP address?

15 A. The code collects the IP address from the targeted
16 computer that it runs on. And so the reason I'm
17 confused is that Special Agent Alfin testified and said
18 that the NIT did not, in fact, send its IP address back
19 to the government. Special Agent Alfin said the way the
20 government learned the IP address was by looking to see
21 where the response from the NIT came from.

22 So think of -- think of the information that
23 this code collects as being the contents of a letter.
24 So it's printed out into a letter, put in an envelope
25 with a to and a from address on the letter. The to

1 address would be the address of the government server;
2 the from address would be the address of the defendant's
3 computer.

4 Special Agent Alfin has testified in this case
5 and others that the way the government learned who the
6 defendant was, the way the government learned what his
7 IP address was, was essentially by looking at the from
8 address on the envelope, not by looking inside the
9 letter. They say that the letter only had the MAC
10 address, the operating system information and the
11 username. But the code that the government gave us that
12 ran on Mr. Jean's computer, that collected a IP address
13 and it printed out an IP address, and Special Agent
14 Alfin testified that the NIT executed successfully.

15 So I'm a bit confused as to why I couldn't find
16 the IP address in the data that the NIT transmitted
17 home.

18 MR. ALFARO: May I approach, your Honor?

19 THE COURT: Yes.

20 (By Mr. Alfaro:)

21 Q. I'm now handing you what's been previously marked as
22 Defendant's Exhibit F and G. Can you please explain
23 what Exhibit F is?

24 A. Sure. Exhibit F is a screen shot of a program
25 called Wireshark -- W-i-r-e, shark -- that I used that

1 opened up the two-way network recording that the FBI
2 provided to the defense.

3 Q. This Wireshark, is that commonly used by individuals
4 in your capacity?

5 A. Oh, yes. It's a frequently used, free tool used by
6 researchers, college students, professionals.

7 Essentially the two-way network recording, as Special
8 Agent Alfin testified, really what it is, it's a copy of
9 every bit of data that was sent back and forth between
10 the NIT and the government's computer as recorded from
11 the government's side.

12 So they basically saved a log of all that data,
13 and then with this Wireshark program, I can actually
14 reconstruct that communication and see which messages
15 were going back and forward.

16 Q. Can you please explain what the next exhibit is? I
17 believe it is Exhibit --

18 A. G.

19 Q. -- G.

20 A. Exhibit -- on the Internet, data, when it's
21 transmitted over the Internet, is cut up into what are
22 called packets. So rather than sending a big parcel,
23 you use a bunch of small envelopes, and you cut the
24 contents up and put them in each envelope.

25 This Exhibit G essentially is a combination of

1 all of those small packets to show the, in a
2 human-readable way, the communication stream between the
3 NIT client and the FBI server.

4 Q. Did you get that from the file that the government
5 provided?

6 A. So I loaded the file that the government provided
7 into Wireshark, which is Exhibit F, and then Wireshark
8 has an option that lets you reconstruct the
9 communication in a human-readable way, and that is what
10 Exhibit G is.

11 Q. Do both of those exhibits, those screen shots,
12 accurately represent the data that you viewed from the
13 government?

14 A. These are the screen shots that I made that I
15 provided to you, and these, to the best of my knowledge,
16 display what the government provided to us.

17 MR. ALFARO: Your Honor, I move to admit
18 Defense Exhibits G and H under seal.

19 MR. DEAN: No objection under seal.

20 (By Mr. Alfaro:)

21 Q. Now, we were talking about this --

22 THE COURT: Hang on a second. I think we
23 already received one of those under seal.

24 THE WITNESS: I think that was the source code
25 as H, your Honor.

1 THE COURT: So the other two are F and G?

2 MR. ALFARO: Yes, your Honor.

3 THE COURT: Exhibits F and G will be received
4 under seal.

5 (By Mr. Alfaro:)

6 Q. We were talking about this discrepancy of what Agent
7 Alfin stated regarding the IP address. Can you explain
8 to the Court what your interpretation is, having viewed
9 all those documents?

10 THE COURT: Let me interrupt you. Do you have
11 a copy of these exhibits for the Court?

12 MR. ALFARO: Judge, I apologize. We just got
13 this -- got this information from the 20th --

14 THE WITNESS: We can put this on the projector
15 unless the sealing is a problem.

16 MR. ALFARO: That's fine with me, Judge.

17 MR. DEAN: We have somebody in the audience.

18 UNIDENTIFIED PERSON IN AUDIENCE: I'm getting
19 ready to leave, Judge.

20 MR. DEAN: I don't want to kick him out in this
21 open courtroom.

22 UNIDENTIFIED PERSON IN AUDIENCE: I have
23 another appointment.

24 (By Mr. Alfaro:)

25 Q. Which exhibit should we start with?

1 A. Can you put the Wireshark, the colorful one, on
2 first, please?

3 Q. Yes.

4 A. So this is a tool made by nerds for nerds. So
5 you'll have to forgive me that it's not the easiest
6 thing to understand.

7 There are two really important things to see on
8 this. You'll see at the top of the program there are a
9 number of fields with names. So there's number, time,
10 source, destination? You see that? Okay.

11 So essentially what you have is a series of
12 communications. So the NIT client talks to the
13 government, the government calls back, then they go back
14 and forth for a while. And so each line in that program
15 shows a single communication between the source, which
16 is originally the NIT, and then the destination.

17 What's relevant here is there's an IP address
18 in the source and an IP address in the destination, and
19 those IP addresses are really, really important. And
20 the reason that this is important is that the IP address
21 information that the government has provided to us
22 that's displayed in this file, this -- Special Agent
23 Alfin has stated that the data the government received
24 is exactly the government -- the data that was
25 transmitted by the NIT. And he said there's no way that

1 it could have been tampered with. And the fact is the
2 way the Internet works, the data that is sent by the NIT
3 has to change at every hop along the path as it goes
4 from the NIT user to the government. And there are two
5 particular places where this changes, and I know this is
6 complex, but I'll try and break it down into English.

7 If I call the Court and I want to speak to a
8 particular employee, I don't know that employee's
9 telephone number. So I call the main number for the
10 Court and I say, you know, can I speak to Judge
11 so-and-so.

12 Now, the person who answers the main court
13 number, they won't transfer me to a judge just by
14 myself. So they will transfer me to the judge's
15 chambers and then I have to speak to the clerk and then
16 the clerk will talk to me. And if I'm, you know, a
17 colleague of the judge, then they will transfer me.

18 When the call gets transferred, you have
19 extensions within the courthouse, but the outside world
20 just sees the main number. Then when the NIT called
21 home to the government, it thought -- it had an IP
22 address it was programmed to use, and any NIT-infected
23 computer could call home to the IP address. That IP
24 address doesn't show up in this file.

25 So the IP address, the destination IP address

1 on the first line is a 172.30 address. That's an
2 internal IP address that's used within organizations to
3 route data internally.

4 What this data shows me is that the NIT called
5 home to a FBI server. The FBI server said, oh, the NIT
6 data really needs to go to this server over here, and it
7 got -- and when it forwarded the call, it changed the
8 destination IP address.

9 So at least once, the IP address information
10 was changed because the government's own IP address had
11 to have changed. This 172 address cannot be reached.

12 If you were to open up your Web browser and
13 type in 172.30.blah, blah-blah, blah-blah, it wouldn't
14 resolve because it's an internal extension.

15 Q. Why is this important?

16 A. Why is it important? So the government has said
17 that this network recording shows exactly what was
18 transmitted by the NIT client, and what I'm saying is
19 this recording could not show what was sent by the NIT
20 client because if the NIT client had tried to send data
21 to a 172.30 address, it would never have reached the
22 government.

23 When the data left the defendant's computer,
24 his Internet service provider would not have known how
25 to get the data to the 172 address.

1 So at some point there was a government address
2 and that got changed between when the data was received
3 by the first government server and when it then got
4 passed onwards and then the recording was captured
5 later.

6 Separately, so the defendant, you know, used a
7 residential Internet connection. And when you use a
8 residential Internet connection, as Special Agent Alfin
9 testified, you don't really get the IP address yourself.
10 It's usually assigned -- you get one IP address for your
11 whole house when you sign up for broadband and what that
12 means --

13 MR. DEAN: Your Honor, I'm going to object to
14 this. This has nothing to do with the search warrant
15 and suppression motion. This is a confession case. So
16 this isn't a whodunit.

17 He's kind of getting into something that might
18 be presented at trial, but again, this is about the
19 motion to suppress and the NIT warrant. I think we've
20 gone far afield of that.

21 THE COURT: Well, I mean, Agent Alfin
22 testified, and the Court is curious in understanding,
23 how the defendant's IP address or how any user's IP
24 address would have been harvested by this NIT. So I'm
25 going to overrule the objection.

1 MR. DEAN: Thank your Honor.

2 A. All right. So when you have a residential Internet
3 connection, you get one IP address. But if you have
4 multiple computers in your house, you have -- you know,
5 you have a computer, your husband or your wife has a
6 computer, you have an iPad or two and you're using
7 cellphones. So you have all these computers and all
8 these devices in your house that all have to use the
9 Internet.

10 And so your wi-fi router does this thing that
11 Special Agent Alfin described which is called network
12 address translation, and what it essentially does is it
13 allows every device in your house to hide behind one IP
14 address.

15 What's important about that is that when -- so
16 just as the government has these internal addresses,
17 your home network has these internal addresses that are
18 not real IP addresses that the outside world can reach.
19 They are sort of fake internal addresses.

20 If you've ever logged into your wi-fi router at
21 home, you might see a 192.168 address. Those are, like,
22 the classic internal IP addresses.

23 When the data left the defendant's computer,
24 the source would have been 192.168-dot whatever. When
25 it reached the wi-fi router, the wi-fi router would have

1 swapped out the fake internal IP address for the wi-fi
2 router's real address that was assigned to the
3 customer's home. The data would have been sent over the
4 Internet and then when it reached the government, the
5 destination IP would have been swapped out from the real
6 one to an internal government one.

7 So why does this matter? The government has
8 said that the data that was transmitted by the NIT from
9 the defendant's computer never changed a single bit as
10 it was transmitted all the way over the Internet. Even
11 if there was no nefarious activity, both the source IP
12 address and the destination IP address each changed at
13 least once.

14 We know the destination IP address changed at
15 least once, the government's address, because the
16 address that's in this file is not an address that the
17 NIT could reach. That had to have changed. And if the
18 defendant had a home wi-fi router, like most people do,
19 then at least that address changed one time as well from
20 the sort of internal fake address to the 70.178 address
21 that appears here.

22 So we know that the IP addresses had each
23 changed at least once and so the reason why this is
24 important is that, you know, if you have -- if we think
25 of the data that the NIT collected again as information

1 that's written on a piece of paper and put in an
2 envelope, the government doesn't know if the envelope
3 was opened or closed, at any point along the way, and
4 then you have --

5 Q. To stop you there, I'm sorry.

6 A. Sorry.

7 Q. So if I can address that, is what you're saying,
8 this two-way data stream is only what they received?

9 A. The two-way data stream is only what they received.

10 Q. So they don't have -- this document, Defendant's
11 Exhibit F that was presented by the government and given
12 to the defendant, doesn't show what the NIT actually
13 sent across the Internet?

14 A. It doesn't show what left the defendant's computer,
15 it doesn't show what left the defendant's home network,
16 and it doesn't even show what the government first
17 received. It only shows what the government -- the
18 government server received once it had been processed
19 inside the government's network.

20 THE COURT: Did it harvest and send back to the
21 government the IP address that was issued to Mr. Jean by
22 his ISP provider?

23 THE WITNESS: So are you asking me about the
24 sort of envelope and letter analogy or just in general?

25 THE COURT: No. I want to know whether or not

1 the NIT harvested Mr. Jean's IP address that was
2 assigned to his household, his modem, whatever, by his
3 Internet service provider.

4 THE WITNESS: So the code that the government
5 has provided to us would have only recorded the internal
6 network address for Mr. Jean's home network. It would
7 not have been the address assigned to him by Cox
8 Communications. The only record of that IP address
9 shows up in this recording, but we know that that data
10 has changed at least multiple times. We know that when
11 the government received the data, they changed the "to"
12 address.

13 Essentially, you know, the IP address is the
14 most important thing in this case. Without the IP
15 address, they wouldn't have been able to get the
16 administrative subpoena and then find the client.

17 THE COURT: Well, let me back up. And I'm
18 sorry to interrupt, Mr. Alfaro.

19 MR. ALFARO: That's fine, your Honor.

20 THE COURT: But if I wait until we get to the
21 end of this, I'll never be able to get back to this
22 sequence.

23 You've put up Defendant's Exhibit F. There's
24 lots of sources IP addresses and destination IP
25 addresses. No one has yet told me what Mr. Jean's IP

1 address is.

2 THE WITNESS: So that would have been -- the
3 address that the government believes was Mr. Jean's was
4 the 70.178 address, the first line.

5 So each line in this file is a communication
6 and so there are only two IP addresses that ever appear
7 in these columns.

8 THE COURT: So on Line 1 under Source, 70.178.

9 THE WITNESS: That would be Mr. Jean's alleged
10 IP address. And then the 172.30, that is the IP address
11 that was internal to the government's network on the
12 receiving end.

13 THE COURT: All right. So to your knowledge --
14 and you've testified that you have reviewed the
15 pertinent documents in this case -- when the FBI went to
16 Step 2, which was to use an administrative subpoena on
17 the --

18 THE WITNESS: On Cox.

19 THE COURT: -- on Cox, what number was in that
20 subpoena?

21 THE WITNESS: That was the 70.178 address.

22 THE COURT: Okay. With that understanding,
23 Mr. Alfaro, proceed to ask questions to help me
24 understand why any of this makes any difference.

25 (By Mr. Alfaro:)

1 Q. Why does it make a difference, when interpreting
2 this, that anything changed? Why does that even matter?

3 A. So if the government -- so as Special Agent Alfin
4 has said, the reason the government doesn't encrypt the
5 data that was going from the NIT to the government
6 server was so they could collect this recording and
7 present it later as forensic evidence. And Special
8 Agent Alfin has testified that this recording is an
9 exact copy of the data that was sent by the NIT and
10 received by the government, and it didn't change at all.
11 Had the government encrypted the data, they would be
12 able to know if it had been tampered with along the way.

13 Encryption basically provides a few properties.
14 One of them is confidentiality. So no one watching on
15 the Internet could see the data as it goes over the
16 network. And the data that would have -- the data that
17 left the defendant's computer probably traveled through
18 a dozen different computers run by a dozen different
19 organizations before it reached the FBI.

20 THE COURT: I'm sorry to interrupt you, Doctor,
21 but -- and I do find some of this very interesting, but
22 I'm going to go back to the objection that Mr. Denis
23 raised earlier and ask if you can help me understand why
24 this is relevant, Mr. Alfaro.

25 The government made application to the judge in

1 this instance and requested permission to deploy a NIT
2 that would harvest the IP address. Among other things
3 that appears to be what was done in this case.

4 So while all this information about the
5 technology that goes on behind the scenes and about how
6 information is broken down into packets and different
7 extensions within a house or an office building, all
8 that's all well and good; what does that have to do with
9 the validity or the facial constitutionality of the
10 warrant at issue?

11 MR. ALFARO: And, your Honor, I guess to
12 briefly summarize, the government has represented that
13 this NIT operated in a certain way, and they represented
14 that to the magistrate judge that there were certain
15 assurances they were going to send this device out and
16 it was going to return reliable information. And the
17 importance here is what they are getting is the IP
18 address.

19 So if we can demonstrate that the government
20 knew and is making misrepresentations about the strength
21 of how they collected this IP address, then the
22 information in the NIT warrant would have been a
23 misrepresentation, thereby nullifying the search -- the
24 judgment.

25 So in essence, the dots I'm trying to connect

1 is if the government would have said, "Hey, look,
2 this -- you know, we're going to collect this a certain
3 way, but we're not going to do it over an encrypted
4 network, we're not going to be able to verify that the
5 IP address that we get to seek an administrative
6 subpoena is going to be verified, we can't verify the
7 chain of custody" or there is an argument to make that
8 there's significant breaks in the chain of custody, then
9 if they would have presented that information to the
10 magistrate, then she would have -- I think it's -- I can
11 take it a step further and say, well, there's obviously
12 holes in what you're misrepresenting to me; so I'm going
13 to deny the order.

14 THE COURT: All right. Well, if this were a
15 whodunit, that would be all well and good, but it would
16 be a time to present it at trial.

17 I don't know of any reviewing -- any judge that
18 is reviewing magistrate that is ever going to have the
19 ability to be presented with what to me is
20 extraordinarily complex information about the
21 technological protocols that are exercised to make all
22 of this happen.

23 I think what is significant from a Fourth
24 Amendment standpoint is did the warrant accurately
25 represent more categorically the information that was

1 sought to be collected by the deployment of the NIT and
2 was there a nexus to the investigative objective and
3 need for that. Then we back up the chain and we've got
4 to be sure there's probable cause there.

5 But, you know, we're not attacking probable
6 cause through any of these questions. What we're
7 attacking is the methodology and whether it was good
8 methodology or bad methodology. But if we kind of back
9 this up to put ourselves in a position of the magistrate
10 judge, she's being asked to give permission to the FBI
11 to deploy a NIT that would have the ability to harvest
12 the account user's IP address because that is a piece of
13 information that they can then go to Step 2 and unmask
14 the identity behind that IP address and determine where
15 that Internet address is residing, in this case in
16 Benton County, Arkansas. And that's exactly, as I
17 understand it, what happened.

18 If that's not what happened, then perhaps I'm
19 just totally clueless, but they represented what they
20 were going to do to the magistrate judge. If my
21 understanding is correct, that is what happened and so
22 all this stuff that goes on behind the scenes is
23 interesting, but I don't see that it goes to what our
24 issue is in this suppression hearing.

25 MR. ALFARO: And I may be mistaken, your Honor.

1 I think my response would be where we're attacking is
2 the warrant represented that the NIT was going to get
3 the IP address. And so the line of questioning I'm
4 trying to engage with Dr. Soghoian is did the software
5 actually do that, could it have done that and is there a
6 mistake that we can -- at least that the government
7 should have known about that should have been provided
8 in the warrant.

9 THE COURT: Well, I'm going to ask you to move
10 along because my understanding of his testimony upon my
11 questions is that Mr. Jean's IP address is the 70.178
12 and that information was, in fact, harvested by the NIT
13 and that is the IP address that was presented to Cox in
14 the administrative subpoena and that's what eventually
15 led to the residential search.

16 So --

17 MR. ALFARO: May I -- may I ask Dr. Soghoian to
18 explain, if I am mistaken, or if we are mistaken, to see
19 if there's any point that needs to be made regarding the
20 motion to suppress and how it relates to the NIT
21 collecting the IP address?

22 THE COURT: Yeah. Assume that's a question,
23 Doctor.

24 A. So I believe there is a miscommunication, and if
25 it's because of me, then I apologize ahead of time.

1 The NIT did not harvest the IP address. The
2 NIT harvested the MAC address; the NIT harvested the
3 operating system version, the information about the
4 computer; it harvested the username, the name of the
5 person that logged into. It put those on a letter, put
6 the letter in an envelope and sent it back.

7 Where you're seeing the 70 address in the
8 Wireshark screen shot, the government says they -- the
9 government believes they received an envelope from the
10 NIT and that the "from" address on the envelope was
11 70.178.

12 The NIT -- but the contents of the envelope
13 does not include the IP address, and Special Agent Alfin
14 testified that the government, in fact, did not harvest
15 the IP address from the computer; they merely looked to
16 see where the NIT response came from and assumed that
17 that was the IP address of the defendant.

18 And what I'm telling you is that both the "to"
19 and "from" IP address information in this recording,
20 both of them have been changed at least once. So the
21 government is depending on the IP address that appears
22 in this file and saying "That is the defendant's IP
23 address, that's the address we put in the subpoena, that
24 led us to his house," but that address changed at least
25 once, and the government's address also changed.

1 What I'm trying to communicate here is that the
2 IP address information in this file is not particularly
3 reliable, and the government has no way of knowing what
4 the defendant's real IP address was because they didn't
5 try to collect that at the computer, and they didn't put
6 it in a sort of sealed and signed evidence bag.

7 Because they didn't use encryption, they have
8 no way of knowing if any of this stuff was tampered with
9 as it was sent from the defendant's computer to the
10 government. What they basically did was send it out to
11 the Internet and hope that it reaches the destination;
12 and whatever address happens to be written in the "from"
13 field on the envelope by the time it shows up at the
14 government's office, that's the address they then send
15 the subpoena to. But they have no way of knowing for
16 sure if the data was modified along the way because they
17 didn't encrypt it.

18 THE COURT: So what -- are you testifying that
19 the NIT was not designed to, and in fact did not, obtain
20 the activating computer's actual IP address?

21 THE WITNESS: The source code that they gave us
22 collects the IP, but the data that was sent over the
23 network does not include -- can you pull up the --

24 THE COURT: No, sir. Just answer my question.

25 THE WITNESS: Okay.

1 THE COURT: Did the NIT as deployed obtain the
2 activating computer's actual IP address?

3 THE WITNESS: We don't know if it obtained it.
4 We do know it didn't send it back, and Special Agent --
5 the code that ran looks like it collected it, but the
6 place on the letter where it would be written is blank.

7 THE COURT: If it didn't send the activating
8 computer's actual IP address back to the FBI, what in
9 your opinion accounts for how they were able to present
10 Mr. Jean's IP address to Cox?

11 THE WITNESS: They received a response. The
12 government server heard back from someone on the
13 Internet. Whatever IP address appeared in the top
14 left-hand corner of the envelope, they assumed that was
15 the defendant's IP. But as I've just testified, that IP
16 address changed at least once on its way to the
17 government. They are hoping that it only changed once
18 and didn't change twice or three times or four times,
19 but that IP address information may have been modified.

20 It was not transmitted back in a way that would
21 be tamper-evident. There are ways to transmit
22 information over the Internet from A to B so that no one
23 can mess with it along the way.

24 THE COURT: So your criticism is that the net
25 result here is that the manner in which it was deployed

1 and harvested the IP address was subject to returning
2 false positives to the FBI?

3 THE WITNESS: It's not just false positives.
4 It could be -- false positive suggests, like, there was
5 an accident. What I'm saying is because they didn't
6 sign and seal the evidence bag, they don't know if it
7 was tampered with as it went from A to B.

8 THE COURT: And that somebody intercepted the
9 letter and wrote somebody else's name in there, set them
10 up, framed them?

11 THE WITNESS: We know that the IP address
12 changed at least once on the sending side, and we know
13 that the IP address information changed on the receiving
14 side at least once.

15 I'm saying the government has no way of knowing
16 if the IP address changed five times or ten times
17 because the only recording of the data they have is from
18 a facility that the government controls.

19 Up until the point that the government received
20 the data, they don't know what happened to it in those
21 scenarios.

22 THE COURT: All right. I think I've heard
23 enough on this topic. Would you please move on,
24 Mr. Alfaro?

25 MR. ALFARO: That's all I have right now, your

1 Honor. Thank you.

2 THE COURT: Mr. Dean?

3 MR. DEAN: Thank your Honor.

4 CROSS-EXAMINATION

5 BY MR. DEAN:

6 Q. Dr. Soghoian, so is it your testimony that we got
7 extremely lucky in that we were happening to look for
8 somebody who was accessing the Playpen site that was
9 using the name regalbegal and it came back to somebody
10 who confessed to using the name regalbegal?

11 A. I'm a expert on surveillance and privacy. I'm not
12 here to say whether you got lucky or not.

13 What I'm testifying is the manner in which the
14 NIT transmitted data back to the government was not a
15 tamper-evident method. There are tamper-evident methods
16 and the government, in fact, employs those in many other
17 areas.

18 When the FBI gave us a copy of the recording,
19 they employed encryption there, but --

20 Q. So your testimony is that if the government had
21 encrypted this, we would have known that the data
22 wouldn't have been tampered with? Encryption is the
23 key?

24 A. That is why the U.S. Government now runs --

25 Q. Yes or no?

1 A. Yes.

2 Q. Okay. Did you give a speech at the University of
3 Maryland earlier this year where you said encryption is
4 no guarantee of privacy but does provide a little bit of
5 balance?

6 A. Encryption -- encryption --

7 Q. Did you give that speech?

8 A. I've given many speeches. I --

9 Q. Did you make that statement?

10 A. I don't know but I definitely spoke at the
11 University of Maryland.

12 Q. It's quoted right here --

13 MR. ALFARO: I would hope that the government
14 would give the witness a chance to speak just like I had
15 to give the government's witness a chance to speak.

16 MR. DEAN: He's being evasive, your Honor.

17 THE COURT: Well, the witness is instructed
18 that if the question can be reasonably answered yes or
19 no that he should answer it yes or no, and Mr. Alfaro
20 will be given an opportunity to ask any followup
21 questions that will be necessary.

22 THE WITNESS: Okay.

23 (By Mr. Dean:)

24 Q. And I'll back up a little bit, Doctor. Your last
25 name is Soghoian?

1 A. That is correct.

2 Q. S-o-g-h-o-i-a-n?

3 A. That is correct.

4 Q. Quote from the University of Maryland, Franciscan
5 Kay School of law in a speech that you made: Encryption
6 offers practical protection, legislative changes.

7 ACLU's top technologist tells --

8 THE COURT REPORTER: Please slow down.

9 MR. DEAN: I'm sorry.

10 A. ACLU's top technologist tells business law
11 students -- and that is a quote -- encryption is no
12 guarantee of privacy, Soghoian says, but it does provide
13 a little bit of balance.

14 Did you make that statement?

15 A. I don't remember, but it's quite possible. I give
16 speeches every week.

17 Q. Is it your testimony here today that encryption is
18 100 percent?

19 A. 100 percent what?

20 Q. Secure. If it's encrypted, it's perfect; we don't
21 have to worry about it?

22 A. This is not a yes or no question. Can I give a --
23 more than a yes or no answer?

24 THE COURT: Well --

25 Q. No, because I think it can be answered yes or no.

1 Either it is or it isn't.

2 A. Well, "secure" means many things.

3 Q. Okay.

4 A. Can I respond and say what "secure" is?

5 Q. I'll let the defense attorney talk.

6 THE COURT: Yeah, please move along, Mr. Dean.

7 I --

8 MR. DEAN: Okay.

9 (By Mr. Dean:)

10 Q. You are here on your own?

11 A. That is true.

12 Q. But you are an employee of the ACLU?

13 A. That is true.

14 Q. Which actively supports Tor?

15 A. No -- what do you mean by "actively supports"? We
16 don't give money to Tor. The ACLU doesn't give money to
17 Tor. The ACLU --

18 Q. You encourage people to give money to Tor?

19 A. I'm not aware of that.

20 Q. Okay. So if on your website there's something where
21 it says "we encourage people to support Tor," that it is
22 this viable tool, that would be incorrect on the ACLU's
23 website?

24 A. I don't run the ACLU website.

25 Q. I didn't say you did, but if it's on there, would it

1 be incorrect?

2 A. I have no idea.

3 Q. Okay. Well, you -- regardless, you're not here in
4 your capacity with the ACLU, and I understand that, and
5 I appreciate that.

6 You are here essentially for free?

7 A. That is correct.

8 Q. You are so passionate about this issue that you came
9 to Arkansas for free to testify for this, about this?

10 A. This is not the first time I've come to Arkansas for
11 free, either. I gave a training for the federal
12 defender's office three years ago.

13 Q. But you are passionate about this issue, sir?

14 A. The Fourth Amendment is defined at the margin, and
15 if you want to work on interesting issues in the Fourth
16 Amendment, you have to get involved in cases that have
17 unattractive facts. Yes, I care about these issues.

18 Q. Do you have a Twitter account with your picture
19 associated with it?

20 A. Yes.

21 Q. @cSSoghoian?

22 A. @cSoghoian, yes.

23 Q. CSoghoian, yeah. And you actually post about these
24 cases on Twitter?

25 A. I tweet about many things.

1 Q. Okay. When the Levin decision in Massachusetts came
2 out, you were excited about that decision; is that
3 correct? Yes or no.

4 A. Yes, sir.

5 Q. Okay. And you tweeted about that?

6 A. I've tweeted about many decisions, yes.

7 Q. So you're an activist?

8 A. I am a scholar, I'm a researcher, and I'm an
9 activist, yes.

10 Q. You understand that the Playpen website is a website
11 that was dedicated to child pornography and had sections
12 on it involving the sexual abuse of babies. You
13 understand that?

14 A. I do.

15 Q. And, yet, you are so passionate about this topic
16 that you're willing to come to Arkansas for free to see
17 that a man is released because of a technicality?

18 A. My colleagues represent death penalty defendants. I
19 mean, if you work on defense, you work with all kinds of
20 clients.

21 Q. Guilty?

22 A. Sorry?

23 Q. Guilty and innocent?

24 A. I think defense lawyers work with all kinds of
25 clients who have done many good and many bad things, but

1 if you care about the Constitution and you care about
2 the Fourth Amendment, you have to roll up your sleeves
3 and get involved in issues that some people don't like.

4 Q. I'll move on.

5 You wrote a dissertation as part of getting
6 your Ph.D. with Indiana University in 2012?

7 A. That's correct.

8 Q. Tell me about the two unpleasant encounters you had
9 with the FBI that you reference in that dissertation.

10 A. The FBI took an interest in a project that I made
11 when I was in graduate school.

12 Q. Was that project crafting a program that would churn
13 out fake boarding passes to an airline five years after
14 9/11?

15 A. As I demonstrated the --

16 Q. Would that be it?

17 A. Would you let me explain?

18 Q. Would that be it?

19 A. That was part of the issue, yes.

20 Q. Okay. Please explain further.

21 A. I demonstrated the ease with which people could
22 bypass the no-fly list, and the FBI took an interest in
23 that and they came to my house, and three weeks later,
24 the investigation was closed.

25 Q. Can you understand why the FBI would take an

1 interest in an investigation where somebody's creating
2 fake boarding passes five years after 9/11?

3 A. So I didn't create fake boarding -- I didn't print
4 the boarding passes out. I created a website that let
5 people make their own boarding passes, but I can
6 certainly understand why that issue was on their radar.

7 I can also say that Senator Schumer had
8 previously publicized the exact same method, that the
9 TSA had ignored that issue, and a year after I did
10 that -- created that website, the TSA flew me out to
11 Washington D.C. to meet with their officials.

12 Two years later they forced the airlines to fix
13 the flaw and then a few years after that, I ended up
14 working for the U.S. Government for a year, employed by
15 the Federal Trade Commission.

16 Q. Let's talk about that. You actually were fired;
17 didn't have your contract renewed. It was not a -- they
18 didn't throw you a party when you left. Would that be
19 accurate?

20 A. My contract wasn't renewed and then they brought me
21 back as a consultant for a few months, yes.

22 Q. And was part of the fact that your contract not
23 renewed because you used your government credentials to
24 attend a closed-door meeting with technology --

25 MR. ALFARO: Objection, relevance.

1 MR. DEAN: Bias.

2 THE COURT: Well, it goes to his bias and
3 credibility as an expert, but --

4 A. As a Federal Trade Commission employee, I had
5 permission from the general counsel's office to attend a
6 surveillance industry trade show where I made a
7 recording of one of the panels, and D.C. is a city where
8 such recordings are legal.

9 I published that recording, again, after
10 talking to the general counsel's office of the Federal
11 Trade Commission, and after that recording was public.

12 This was a recording in which an executive from
13 Sprint revealed that the company had turned over
14 customer data to the government 8 million times in one
15 year.

16 Q. Did you tell everybody in there that you were
17 recording that?

18 A. No.

19 Q. So you secretly recorded it?

20 A. That's legal in Washington D.C.

21 Q. I understand. I'm not accusing you of a crime, but
22 the FTC wasn't happy with you and your contract didn't
23 get renewed; isn't that accurate?

24 A. The company complained, the FTC didn't renew my
25 contract after a year, and then as I said with, they

1 brought me back as a consultant after a few months.

2 Q. Did that get your door kicked in or have FBI agents
3 come talk to you, or what's your second unpleasant
4 encounter with the FBI that you refer to in your
5 dissertation?

6 A. It's been a few years.

7 Q. I would -- you don't remember an unpleasant
8 encounter with the FBI?

9 A. I've had plenty of unpleasant encounters with
10 government officials over the years.

11 Q. Well, okay. We'll just cut to the chase. You're
12 not a big fan of the FBI, are you?

13 A. I'm a fan of -- I've met some very nice people of
14 the FBI; I've had beers with people from the FBI.

15 Do I have problems with certain surveillance
16 technologies with the government employees? Yes. But I
17 believe that everyone can engage in public service in
18 their own way. I worked for the government for a year,
19 and now I engage in public service in this way by
20 educating the public and educating the courts and
21 helping defense lawyers.

22 Q. Did you post the tweet, "The FBI shat the bed with
23 their playpen op. An overbroad, illegal warrant and no
24 chain of custody for the data they collected"?

25 A. When?

1 Q. Did you post it? I'm not asking when.

2 A. I see my face on it. So probably.

3 Q. Okay. Fair. Was that sent before or after you
4 testified in Washington?

5 A. I don't know. I've tweeted tens of thousands of
6 times. I don't remember the dates of those specific
7 tweets.

8 Q. Is it true, yes or no, that the homepage of Tor
9 advises people that it cannot provide perfect security?

10 A. Yes.

11 Q. Wouldn't it be just completely foolish for somebody
12 to guarantee perfect security nowadays?

13 A. If someone were to guarantee perfect security, they
14 probably would not be being honest. That is, it is very
15 difficult to deliver perfect security. But you can
16 deliver pretty good security.

17 Q. But the very nature of the Internet is it's just
18 communication going back and forth, correct?

19 A. There is data that goes back and forth over the
20 Internet, yes.

21 Q. And you testified in the Michaud case that it is
22 very hard for the average person to protect their
23 privacy online. Is that correct?

24 A. That is true.

25 Q. And I think you went further to say to get privacy

1 online, you have to work very, very hard; use technical
2 software?

3 A. That is also true.

4 Q. Now, Tor has some legitimate purposes, right?

5 A. Tor has many legitimate purposes, yes.

6 Q. And it's used also by people for illegitimate, or
7 unlawful purposes?

8 A. That is true.

9 Q. But the main reason people are using it is because
10 they don't want their identity discovered, whether they
11 are doing something bad or not?

12 A. That is not necessarily true. So the people who are
13 running services may wish to provide -- so there are Tor
14 hidden services that are run by people who are not
15 trying to hide their location but, rather, are trying to
16 circumvent government filtering. So there are dissident
17 news sites that target THASPRRA (phonetic), or target
18 people in countries that filter lots of news. That is
19 one reason why people might use Tor.

20 In fact, Facebook offers access to users over
21 the Tor network, and when you log in to Facebook, you
22 have to give them your real name. The reason that
23 Facebook does that is to provide access to people in
24 places where the Internet is filtered.

25 Q. Okay. But to reiterate, you would agree that people

1 get on Tor for illegal purposes, some people, not all?

2 A. There are people who use Tor illegally -- or who use
3 Tor for illegal purposes.

4 Q. Do you have any direct evidence here today that this
5 NIT was tampered with?

6 A. No. Although I do have evidence, as I described,
7 that the recording that the government has provided the
8 defense is not the -- the packets that left the
9 defendant's computer are not the same as those that were
10 recorded by the government.

11 Q. Even though they happen to lead right back to the
12 same defendant?

13 A. The government's IP address changed.

14 Q. I get it. Would the misconfiguration that you
15 referenced in direct allow the FBI to identify the user
16 who connected to the website using Tor?

17 A. By the misconfiguration, you mean the one that
18 mandated the website was accessible via Tor and the
19 regular Internet at the same time?

20 Q. Yes.

21 A. Would that have allowed what now?

22 Q. Would that allow the FBI to identify the user who
23 connected to Tor?

24 A. If the user -- no. That would have not.

25 Q. Are you aware of anyone who was identified by the

1 NIT that did not connect to the Playpen website?

2 A. I mean, I'm only -- I'm only aware of the cases that
3 either I've been brought into or the cases that are
4 public. My understanding --

5 Q. So you're not aware of any so-called innocent user?

6 A. I mean, there are many NIT cases that are not out.

7 Q. But you are not aware?

8 A. I am not aware.

9 Q. Now, you seem to say that we need to kind of -- we
10 need to open the door on this exploit, make it
11 transparent?

12 A. I mean --

13 Q. Wouldn't you agree that if we made the exploit
14 available, we would lose that tool forever as law
15 enforcement?

16 A. I think you're mischaracterizing my statement.

17 Q. Okay. Please help me with that then.

18 A. When I said -- when I was talking about
19 transparency, I was talking about judicial transparency.
20 So I was saying the government should have described the
21 exploit to the judge and should have described how, at a
22 high level, how it worked, what risks there would be if
23 the exploit got out.

24 Q. In a search warrant that cannot be sealed forever?

25 A. There are search warrants that -- for NITs that are

1 still sealed three years later.

2 Q. Okay. But the seal is not guaranteed. We don't
3 know for sure whether a search warrant's going to be
4 sealed. Would you agree with that? It's up to the
5 judge?

6 A. That is true. Judges ultimately control the seals
7 in their cases.

8 Q. So if a law enforcement tool, a specific tool, not
9 the tactic, but the tool used to do something to solve
10 crimes is made public, wouldn't you agree that that
11 could have horrible repercussions either by, we lose the
12 tool to investigate people, or it gets in the wrong
13 hands and all these other people are using it for
14 malicious purposes?

15 A. I don't see the connection between not describing
16 the technology to the judge, even at a high level. You
17 don't have to say, "Look, on Line 3 we do this, on Line
18 4 we do this."

19 I don't understand why there's any risk to the
20 public from providing a high-level description to a
21 judge of the fact that you're going to use an exploit
22 and what the risk is to other people if the exploit
23 malfunctions or somehow gets out. That seems like
24 something where there's no downside to being more
25 forthright with the Courts.

1 Q. You criticize the language in the Playpen warrant
2 that said we didn't make the judge aware that it could
3 get anybody, but isn't it true that the Playpen warrant
4 specifically said that it would get people who would log
5 on to the Playpen website, wherever located?

6 A. The government has hit innocent people in previous
7 NIT operations.

8 Q. That is so not responsive to what I just asked you.
9 Didn't the warrant say that it would get people who
10 logged on to the Playpen website, wherever located?

11 A. That is -- well, the warrant actually says the
12 search would be in the Eastern District of Virginia.

13 Q. Okay.

14 A. Is that what you're describing?

15 Q. No.

16 A. Sorry.

17 Q. This is actually --

18 A. I'm a little confused. Why don't you --

19 Q. You testified in the Michaud case, and the Court in
20 Michaud case, that was one of the reasons for their
21 ruling, denying the motion.

22 Are you aware that the warrant said that it
23 would attach to people who logged on to the Playpen
24 website, wherever located?

25 A. So this is a Defendant's Exhibit B. On the top of

1 the warrant, it says that it would be -- it would
2 authorize the delivery of the NIT to -- of the computers
3 that access.

4 Q. Sir, are you aware --

5 THE COURT: Let me -- I mean, it says what it
6 says.

7 MR. DEAN: I'll move on, Judge.

8 THE COURT: I mean, direct him to a specific
9 paragraph, like 46(a), but let's not talk about
10 generalities because the Court can read too.

11 MR. DEAN: Thank you, Judge. I'll move on.

12 (By Mr. Dean:)

13 Q. You testified in direct that the FBI should not be
14 using zero-days?

15 A. I think there are serious public policy reasons why
16 the government shouldn't use zero-days, and two White
17 House officials last week wrote a report saying the same
18 thing.

19 Q. Do you have direct knowledge that the FBI did, in
20 fact, use the NIT to identify innocent users in the
21 Freedom Hosting investigation?

22 A. We know that the government was caught, as in the
23 NIT was published. We -- the Washington Post has quoted
24 ex-government officials -- or, sorry.

25 The Washington Post has quoted government

1 officials saying that the government targeted users to
2 Tor Mail. The government delivered the NIT on the
3 homepage, not even the post-login page. So the
4 government had no way of knowing if the people who were
5 visiting Tor Mail were criminals or innocent people.

6 Q. But again, you have no direct knowledge that
7 innocent people were targeted?

8 A. When you say "targeted," do you mean hit, or that's
9 what the government was aiming for?

10 Q. I don't know what you mean by "hit." Targeted?
11 Looked at?

12 A. Did their computers run the NIT or is that who the
13 government was trying to hit?

14 Q. This is frustrating. I'm going to end my
15 questioning.

16 MR. DEAN: No further, your Honor.

17 THE COURT: Mr. Alfaro?

18 MR. ALFARO: Just a few, your Honor.

19 REDIRECT EXAMINATION

20 BY MR. ALFARO:

21 Q. Dr. Soghoian, the government was asking you when it
22 first started about whether encryption is 100 percent,
23 flawed. Can you briefly talk about, are there still
24 weaknesses when you send something over an encrypted
25 network?

1 A. So what I was trying to explain then was that
2 encryption delivers many benefits. One of them is
3 confidentiality. That is, data cannot be intercepted.
4 Another is that data cannot be -- that data is
5 tamper-evident. That is that if information is tampered
6 along the way, you know that it was messed with.

7 There are also different kinds of encryption.
8 There is encryption of data at rest. So an encrypted
9 iPhone, there is data encryption over the network. And
10 so, you know, I don't remember the specifics of that
11 Maryland speech that the government attorney referenced,
12 but I don't think I was describing this particular form
13 of network transport encryption.

14 I think I was speaking at a very high level
15 about the fact that encryption cannot protect us from
16 everything. Privacy and data security, to be more
17 secure, to achieve more privacy, we need -- we need
18 better software, we need better regulation, we need
19 better default settings.

20 Encryption is one piece of that puzzle but, you
21 know, when the government lawyer asks, you know, "Isn't
22 it true that encryption cannot deliver perfect
23 security," of course it cannot deliver perfect security,
24 but a world without encryption has even less security
25 and less integrity of data.

1 Q. So encryption could be better when we're talking
2 about the integrity of the data sent over the Internet?

3 A. If a doctor washes his or her hands before they
4 treat you, that doesn't mean they are going to solve
5 your problem and cure your disease. But if they don't
6 wash their hands, they're going to have a really bad
7 time.

8 Q. Could the government have set it up to where the NIT
9 was going from the Virginia server to Arkansas and back
10 over an encrypted network?

11 A. Yes. Not only could the government have done that,
12 but last year the Office of Management and Budget
13 required that by the end of this year, every U.S.
14 Government website has to be encrypted, every site. And
15 the White House is already encrypted, the FBI website is
16 now encrypted.

17 By the end of this year, we expect all U.S.
18 Government agencies to be complying with this rule and
19 so one would imagine that, you know, this time next
20 year, future NIT operations will employ encryption and
21 will gain the benefit of the integrity protection
22 provided by encryption.

23 I'd also like to note that the government could
24 actually have had its cake and eaten it too. They could
25 have encrypted the connection between the NIT client and

1 a government server and then once the data was received
2 by the government server, they could have passed it on
3 over an unencrypted internal connection, recorded the
4 data, had their forensically sound evidence, but still
5 made sure that no one was messing with anything as it
6 was going over the open Internet.

7 I'm surprised to find anyone from the
8 government justifying not using encryption because when
9 I worked at the Federal Trade Commission, we would
10 investigate companies that didn't encrypt their
11 customers' data because when you don't encrypt data, you
12 make it more likely to be hacked, you make it more
13 likely to be stolen, and you make it more likely to be
14 changed without your knowledge.

15 Q. The government asked you -- or talked about the
16 risks of identifying this type of exploit and being it
17 made available to the public.

18 In other NIT cases has the government turned
19 that information over?

20 A. So in the Operation Torpedo case, the government did
21 provide the exploit; and in the operation -- or in the
22 Freedom Hosting case, the government didn't provide the
23 exploit, but they were caught and so someone, or
24 multiple people, saved a copy of the exploit and
25 published it online.

1 Q. So at least in the Torpedo case, the government was
2 forthcoming, gave all this information up to the
3 defense?

4 A. I'll note that while they turned over the exploit in
5 the Torpedo case, the government was not able to turn
6 over the source code to their NIT because they lost the
7 source code in that case.

8 Q. Why does that matter?

9 A. It's way more difficult for an expert to analyze the
10 computer-readable code --

11 MR. DEAN: Objection, your Honor. We're
12 talking about losing a source code in a case that's not
13 at issue here.

14 MR. ALFARO: I'll withdraw the question, Judge.
15 (By Mr. Alfaro:)

16 Q. Dr. Soghoian, you're under a protective order
17 regarding the contents of the NIT, correct?

18 A. You provided me with a protective order, and I
19 understand that I'm not allowed to share anything that
20 I've obtained with anyone else, yes.

21 Q. If you were given a copy of the exploit, would you
22 be willing to do the same thing so it doesn't turn over
23 to anyone else?

24 A. To be perfectly honest, I don't have the skills
25 required to analyze the exploit. I don't think I'm the

1 right person for that. I would certainly be able to
2 help the defense find the right expert but, you know,
3 just like you wouldn't have a tax lawyer represent you
4 in a murder case, I'm the wrong kind of computer
5 scientist to look at a browser exploit.

6 MR. ALFARO: That's all I have, your Honor.

7 THE COURT: Does that prompt anything else?

8 MR. DEAN: No, your Honor.

9 THE COURT: All right. Thank you very much,
10 sir.

11 THE WITNESS: Thank you, sir.

12 THE COURT: Any other witnesses?

13 MR. ALFARO: No further witnesses, your Honor.

14 THE COURT: All right. Gentlemen, it's about
15 5:15. As I indicated, I have read your motions, read
16 your briefs. I appreciate testimony presented by both
17 sides today.

18 Could y'all wrap it up in ten or fifteen
19 minutes of argument?

20 MR. ALFARO: Yes, your Honor.

21 THE COURT: All right. Mr. Dean?

22 MR. DEAN: Thank you.

23 CLOSING ARGUMENT BY THE GOVERNMENT

24 MR. DEAN: An investigation into a website
25 solely dedicated to illegal activity occurring in a way

1 to mask the identity of the users, that was the stated
2 purpose of the Playpen website. This was not Google,
3 this was not Amazon, this was not something that was
4 easily accessible. This wasn't an easily accessible
5 pornographic website. You had to have knowledge of its
6 existence to even go looking for this particular website
7 because of the steps the administrator took to cover it
8 up.

9 Law enforcement took the steps necessary to
10 investigate this the type of particular crime. They
11 used authority granted to them by a magistrate judge
12 every step of the way. They completed a technical,
13 explanatory, instructive 33-page application for a
14 search warrant.

15 They were not avoiding procedure in this case.
16 They were doing everything they could to investigate
17 this technologically advanced criminal activity.

18 One of the key issues raised by the defense in
19 their brief is Rule 41. I'm not going to repeat all
20 that, but the Supreme Court has said this rule can be
21 interpreted flexibly.

22 Now, flexibility allows the sort of search that
23 the magistrate authorized in this case. The defense in
24 their brief talked about the fact that there's a
25 proposed rule change that means that we must have been

1 wrong in this case because we're trying to change the
2 rule to make it right. That's not the case. What we're
3 doing is taking a gray area of the law with this rule
4 change and making it black and white.

5 Now, I'm aware that the majority of courts have
6 ruled against the Rule 41 issue in this matter. I'm not
7 willing to concede. The NIT warrant satisfied Fourth
8 Amendment warrant requirements in all respects:
9 Probable cause, particularity and approaching a neutral
10 and detached magistrate.

11 In stating that the warrant was void, to me the
12 Levin decision erroneously relied on where the warrant
13 application made it clear that the place to be searched
14 for -- they relied on a case that said something
15 completely different than what happened in this case,
16 that Sixth Circuit decision.

17 The warrant in that case stated it was
18 absolutely going to be outside of her district. In our
19 case it said anywhere, wherever the people are located.
20 There's a difference in that. There's a big difference
21 in that.

22 I'll point the Court to a recent decision from
23 the District of Kansas regarding this premise. It's
24 United States versus Moreno-Magana, M-a-g-a-n-a. The
25 cite is 2016 Westlaw 409, 227. Basically it says that

1 the warrant contemplated a search within the authorizing
2 judge's district and did not specify a search only
3 outside her district; the warrant is presumptively
4 valid. And that's what occurred here.

5 But regardless of how this Court makes a ruling
6 on the Rule 41 issue -- and I quite frankly don't
7 believe it has to, to resolve this matter -- it is clear
8 that suppression for any possible violation of Rule 41
9 is not warranted for several reasons.

10 According to the Eighth Circuit, suppression
11 would only be warranted for prejudice in the sense that
12 the search might not have occurred, or it would have
13 been so abrasive if the rule had been followed; or
14 evidence of intentional and deliberate disregard of a
15 provision in the rule.

16 As I've previously stated, the pillars of the
17 Fourth Amendment were complied with by law enforcement
18 in this case. FBI requested and obtained a search
19 warrant from a neutral and detached magistrate. It was
20 based on probable cause.

21 Now the defendant wants to attack probable
22 cause, but none of the eight courts that have heard this
23 case previously across the country have said there
24 wasn't any probable cause. The particularity
25 requirement was met as the warrants laid out in detail

1 exactly what the FBI was going to do.

2 Regarding any intentional and deliberate
3 disregard for Rule 41, there's no controlling loss, and
4 a magistrate cannot issue this type of warrant. The
5 closest the defendant comes is citing the In Re: Warrant
6 case where law enforcement applied for a warrant and it
7 was rejected.

8 Your Honor, as you know, that happens all the
9 time. We submit warrants to the Court; sometimes they
10 get granted; sometimes they get rejected. That's not
11 precedence. That doesn't mean anything as far as this
12 case. That was a fact-specific case; this is another
13 fact-specific case.

14 Regarding the prejudice prong, the defendant's
15 argument that no Court anywhere could have authorized a
16 search of Jean's computer or any users of the Tor
17 network because of the steps that were taken to mask
18 their identity, thereby making them immune to criminal
19 process, is not the type of prejudice this Court or any
20 Court needs to give credibility to. That's not what it
21 means.

22 The case law cited by the defendant has found
23 that when a magistrate issues a warrant for something
24 known to be located, that's prejudice. And again,
25 that's not the case here. Nobody knew where these users

1 were because of the steps that they had taken to conceal
2 their identity.

3 So there was no way in knowing what they were
4 going to get back. Now, they had an idea and that's why
5 they said "wherever located," but they could not point
6 to Arkansas or California or Washington. That
7 necessitated the very technique that the FBI used here.

8 So the suppression argument fails because all
9 of the steps the FBI took to draft and obtain the
10 warrant show reasonableness during this investigation
11 and a clear understanding of the purpose of the warrant
12 and what the FBI was seeking. There's been no evidence
13 presented that the FBI agents misled the magistrate in
14 their application for the warrant.

15 The defendant in their motion, and a little bit
16 today, makes an argument for privacy and protection of
17 the home. And while I will concede that courts in other
18 districts have come up with different levels of
19 expectation of privacy, they have consistently, when
20 confronted -- when addressing the issue, they've
21 consistently held that there is a diminished expectation
22 of privacy when one is accessing the Internet through a
23 computer.

24 The Eighth Circuit case that I found and
25 referenced in my response was U.S. versus Suing,

1 S-u-i-n-g. They held there is no reasonable expectation
2 of privacy of an IP address when using peer-to-peer
3 software, and this is basically consistent with opinions
4 across the country.

5 By its very nature, the Internet is an
6 communication tool. It involves information coming in
7 and out of a computer using a unique identifier, this IP
8 address that we've referenced.

9 To say that there's an expectation of privacy
10 makes no sense because as users of the Internet, your
11 Honor, we all know that when you get on a retail website
12 on the Internet and you shop for something, for the next
13 several weeks or months, you start getting pop-up ads
14 that relate to the thing that you were looking at.
15 People know that. That's common knowledge.

16 It's disingenuous to prepare this to crawling
17 in through somebody's window and disabling their
18 security system, as the defense represented in their
19 motion.

20 All that aside, we're left with good faith.
21 Good faith must be considered in that the law
22 enforcement in this case absolutely acted in an
23 objectively reasonable reliance upon the authorization
24 of the federal magistrate, who found probable cause, who
25 found particularity and who ultimately authorized the

1 technique that they were seeking.

2 They didn't take the warrant and then go and
3 disobey it or disregard it or go outside its
4 authorization. They were actually applying it more
5 narrowly than the magistrate authorized them to use it.
6 That can't be anything but good faith. They did a
7 better job than they were allowed to do.

8 So suppression isn't necessary in this case
9 because we have no evidence of wrongful police
10 misconduct, deliberate, reckless or grossly negligent
11 conduct. We don't have any of that. That's not what
12 happened here.

13 This warrant, 33 pages, represents the best
14 efforts of law enforcement to comply with Rule 41 by
15 seeking approval in the jurisdiction that contained the
16 strongest known connection of criminal activity under
17 the investigation. To ignore that would be inconsistent
18 with the Supreme Court's recent decision on the Herring
19 case regarding exclusionary rule and the cite for that
20 case is 555 U.S. 135. It's a 2009 case.

21 This website was operating in Virginia. The
22 users were voluntarily accessing the site that was
23 located in Virginia. The information from those
24 computers would be retrieved in Virginia; so they sought
25 authorization in Virginia, the only known district that

1 had a connection to this case. Nobody on earth would
2 expect these agents to go to 94 districts and apply for
3 search warrants. So if nothing else, good faith saves
4 the day, although most other courts dealing with this
5 haven't had to get to that issue in making their
6 decision.

7 So in summary, your Honor, the scope of the
8 warrant was very limited. It accomplished its narrow
9 goal of identifying the users who were accessing the
10 Playpen website, who were violating the law regarding
11 child exploitation, and they did not exceed the scope of
12 that warrant. It's reasonable. What happened here was
13 lawful conduct.

14 THE COURT: So knowing that the NIT would be
15 sent and attached to the user's computer for purposes of
16 sending back the IP address and other things, and
17 knowing that the user would -- could be located outside
18 of Virginia, I just do not understand why it was that
19 law enforcement didn't seek a district court that would
20 have -- that wouldn't be limited geographically in the
21 scope of issuing the warrant like a magistrate judge is
22 under Rule 41.

23 Is there any particular reason why the
24 magistrate judge in this case was sought out as opposed
25 to the district court judge that we know that was

1 already familiar with the facts of the case?

2 MR. DEAN: I'm unaware of that, and I have
3 looked at all the other cases. That hasn't been brought
4 up before. Obviously Special Agent Alfin wasn't able to
5 give an answer to that.

6 All I can think of is that it was autopilot,
7 that, you know, "Oh, you want a search warrant? Go to a
8 magistrate. You want a search warrant, go to a
9 magistrate." That's the only thing that I can reason
10 because I've seen no answer to the contrary.

11 THE COURT: All right. Thank you, Mr. Dean.

12 MR. DEAN: Thank your Honor.

13 THE COURT: Mr. Alfaro?

14 MR. ALFARO: Thank your Honor.

15 CLOSING ARGUMENT BY THE DEFENDANT

16 MR. ALFARO: Just to briefly address the
17 arguments in our motion, Judge, I think the government
18 has two problems. The first problem is the search
19 warrant clearly says that the property to be searched
20 will be in the -- is located in the Eastern District of
21 Virginia, and the judge -- the warrant that the judge
22 signed explicitly says that.

23 So even though the affidavit on Page, I think
24 it was 40-something in the --

25 THE COURT: That's -- look at Paragraph 46(a)

1 of the search warrant.

2 MR. ALFARO: Yes, Judge. So 46(a) I believe
3 says "wherever located" in the affidavit.

4 THE COURT: This is the section where it says
5 what is being requested by law enforcement, that the
6 Court issue a search warrant authorizing the following:
7 A, that the NIT may cause an activating computer,
8 wherever it is located, to send a computer -- to send to
9 a computer controlled by the government the information
10 that we have discussed.

11 So the argument that you raise that somehow the
12 government misled the magistrate judge into believing
13 that this would only -- this information would only be
14 harvested from computers in the Eastern District of
15 Virginia is somewhat lost on me as to why you're making
16 that argument.

17 MR. ALFARO: And, your Honor, I'm not making
18 the argument that the government misled them. The
19 argument that I'm making is this: Obviously we have to
20 assume that the judge read that, that the judge read the
21 application, that these activated computers, wherever
22 they are located, is what the government is trying to
23 search. So obviously we have to assume the judge read
24 that.

25 When she issued the warrant, when we look at

1 what -- the warrant that she signed, it doesn't say that
2 they are allowed to search any computer wherever it's
3 located. It says they're allowed to search property
4 located in the Eastern District of Virginia.

5 So I think the connection there is she read
6 that and declined to authorize a warrant for any
7 computer, wherever it's located. She said, now, we're
8 only going to -- I'm only authorizing this for property
9 located in the Eastern District of Virginia. So by --

10 THE COURT: And how are you getting to that
11 conclusion?

12 MR. ALFARO: Well, Judge, I guess what I'm
13 saying is if the judge would have authorized a computer
14 anywhere, anywhere in the United States, wouldn't that
15 have been in the warrant that the judge signed saying
16 anywhere, wherever they're located.

17 THE COURT: Well, didn't she sign the warrant,
18 or didn't -- yeah.

19 MR. ALFARO: She did. She did, Judge. So if
20 we look at the search and seizure warrant, it says an
21 application by federal law enforcement officer or
22 attorney for the government requests search of the
23 following person or property located in the, blank,
24 district of blank. So it's the Eastern District of
25 Virginia.

1 I think that if she was intentionally
2 authorizing computers wherever they are located, meaning
3 anywhere in the world, she would have prescribed
4 "Eastern District of Virginia and elsewhere," or
5 "wherever they are located." Because that information
6 is omitted from the warrant, I think we can -- I think
7 the Court is allowed to consider the analysis that the
8 warrant that Judge Buchanan signed circum- -- left out,
9 or didn't authorize, a computer anywhere but the Eastern
10 District of Virginia.

11 Should the Court deny that analysis, then the
12 next question is the judge intentionally authorized a
13 warrant that searched computers wherever they are
14 located, meaning outside -- potentially outside of her
15 own district, then that is a direct violation of Rule
16 41(b).

17 I think every single Court with the ex- -- has
18 analyzed this, with the exception of two judges inside
19 the Eastern District of Virginia, which would make sense
20 because the defendants in those cases are within the
21 district. Every other judge has ruled that this warrant
22 is a violation of Rule 41.

23 THE COURT: Well, magistrate judges are
24 authorized under Rule 41, I believe it's (b)(4), to
25 issue GPS tracking warrants, are they not?

1 MR. ALFARO: They are, your Honor, I would
2 argue.

3 THE COURT: So is the NIT not analogous to -- I
4 mean, if we were back in the 1980s and we were talking
5 about a warehouse in North Carolina or Virginia that
6 stored large volumes of VHS tapes of child porn and it
7 had a perimeter security fence; and if you were a
8 customer of this warehouse, you had to come to the
9 security perimeter fence and punch in a code to get past
10 the gate that then would allow you into the warehouse to
11 fill up your basket full of VHS tapes full of porn, and
12 law enforcement was investigating that trying to find
13 out who these further distributors of child porn were
14 and so they go and make application to put a tracking
15 device on a vehicle, clearly the magistrate judge had
16 the authority to do that, regardless of the fact that
17 the vehicle might leave the jurisdiction in which the
18 device had been attached to the vehicle. True?

19 MR. ALFARO: That's correct, your Honor.

20 THE COURT: So how is this any different in
21 principle? I realize it doesn't envision the technology
22 that was deployed here, but in substance how is it any
23 different than a GPS tracking device?

24 MR. ALFARO: There, your Honor, we would -- we
25 would suggest that this Court adopt the analysis

1 prescribed in the Michaud case, the Arterbury case, and
2 the Levin case. Rule (b)(4) says a magistrate judge
3 with authority in the district has authority to install
4 within the district a tracking device, blah-blah,
5 blah-blah, to track the movement of a person or property
6 located within the district.

7 So there -- and when we're talking about a
8 tracking device, the government has to go to a car
9 that's located within the district, controlled by the
10 defendant, place the tracking device on while it's in
11 the district and then monitor it.

12 Once it leaves the district, that is still okay
13 because it attached the beeper of property that's
14 located within the district.

15 THE COURT: Well, but in the virtual -- I mean,
16 if we were in the 1980s, Mr. Jean might have jumped in
17 his car, got on Interstate 40 and driven all the way
18 across the country to North Carolina for this warehouse
19 where the VHS tapes containing the child porn were
20 located.

21 But in the day and age that we live, he didn't
22 jump on the interstate; he jumped on the Internet. And
23 he didn't go to a physical warehouse; he went to a
24 warehouse full of pornography that was on a server in
25 North Carolina, or by that point it had moved to

1 Virginia.

2 And he didn't have to knock on the door and go
3 inside a warehouse, but what he did have to do was enter
4 his user code, his ID, and only while he was on the
5 Internet connection. He's the one that knocked on the
6 door of this server that was located in Virginia, and
7 only after that door was open and the two computers were
8 communicating was he infected with this malware or good
9 ware, whatever you want to call it.

10 Why isn't that, in principle, the exact same
11 thing that would have happened if the FBI was
12 investigating this back in the 1980s?

13 MR. ALFARO: Because as the testimony came out
14 through today, the installation didn't occur when he
15 made -- when he knocked on the door of the server that's
16 in Virginia.

17 THE COURT: But the infection would not have
18 occurred but for his entry into the Eastern District of
19 Arkansas where the server was located.

20 MR. ALFARO: That's true, your Honor, but the
21 rule doesn't prescribe that. The rule is specific that
22 it says that the installation has to occur in the
23 issuing district.

24 So just because the defendant knocked on the
25 door doesn't mean that the tracking device was installed

1 while he was knocking on the door or when he walked
2 through the door. It wasn't installed until he left the
3 district, and I --

4 THE COURT: What if the NIT had been attached
5 to the file that was being downloaded? How would that
6 be any different than if he physically walked in this
7 warehouse and they put a tracking device in the VHS tape
8 that contained the child pornography?

9 MR. ALFARO: Well, now I'm too many analogies,
10 Judge. Can you restate your question?

11 THE COURT: Sure. In the 1980s when child
12 pornography was on videotapes, if the government wanted
13 to track it -- and perhaps I'm mixing my technologies,
14 but let's assume the 1980s they had the ability to put
15 some sort of tracking device in the actual VHS tape.

16 MR. ALFARO: My question would be where was the
17 VHS tape when the tracking device was put on it because
18 if it was put on outside the district of the issuing
19 warrant, then we would have a clear 41(b) violation. So
20 just like --

21 THE COURT: But in my analogy in the 1980s, he
22 jumped in his car, got on the interstate, went to a
23 physical warehouse in Virginia, picked up his bucket
24 load of VHS tapes, and inside one of those VHS tapes was
25 a tracking device, and he left the State of Virginia

1 with the tracking device.

2 MR. ALFARO: And that's assuming -- and I think
3 here's the issue with it, with the technology, Judge.
4 The tracking device, once you put it on the VHS tape,
5 it's recording information. Regardless of where it's
6 being moved, it's collected information.

7 Here the NIT, once this -- once the person
8 knocks on the door and he walks through to get his VHS
9 tape, it's not collecting information. It has to --

10 THE COURT: No, he's infected within .27
11 seconds was the testimony.

12 MR. ALFARO: Well, that's correct, Judge, but
13 it still has to be -- it still has to be installed in a
14 district outside of the authority of the magistrate
15 judge. So it's unlike a beeper in the sense that a
16 beeper, or the GPS, once you enable it, it's recording
17 everything.

18 Here it went back to his computer, but it
19 wasn't recording anything on the way there. It wasn't
20 until it was at his computer that it activated and
21 started reviewing information. So, therefore, the
22 installation was not only not in the district; the
23 information was collected outside of the district. So,
24 therefore, (b)(4) would be completely inapplicable,
25 Judge.

1 THE COURT: Well, ultimately if it's the act of
2 going to this virtual warehouse that is residing in
3 Virginia, where the tracking device becomes attached, I
4 mean, but for knocking on the door of this virtual
5 warehouse in Virginia, he would never have been infected
6 with this tracking device.

7 MR. ALFARO: That's true, Judge, but that still
8 requires the warrant to fit before. So I think the
9 Court in the Michaud case answered the question more
10 specifically than I am able to.

11 For (b)(4) to apply, the property has to be
12 located in the Eastern District of Virginia when it's
13 installed. So the question is when is the GPS or when
14 is the NIT installed. Well, we know it's not installed
15 when it's in the District of Virginia. So it falls
16 there. The next --

17 THE COURT: Well, if he init- -- I mean, this
18 gets me back to my question of let's assume that the NIT
19 had been attached to a file that was being downloaded
20 from the server that was located in Virginia. Would you
21 be objecting to that?

22 MR. ALFARO: I believe we would, your Honor,
23 because it's not -- the triggering aspect here is when
24 the information is being revealed.

25 THE COURT: Well, no, because you've already

1 agreed that if the tracking instrument is attached in
2 Virginia, there's nothing wrong with the fact that it
3 reports information after it crosses the border in North
4 Carolina.

5 MR. ALFARO: So I guess what I'm saying here is
6 if he's just clicking on the device -- on the file that
7 initiates the download, it's still the same thing
8 because the NIT has to travel across state lines to do
9 what it does. It can't not travel across state lines to
10 do what it does.

11 So I guess what I'm saying is the knocking on
12 the door isn't a (b)(4) question. The (b)(4) question
13 is when is it put there to do what it does then.

14 So the knocking on the door isn't the mechanism
15 that starts the analysis. It's when it was put on the
16 device so it can do what it does. And because the
17 compute -- because we all know, even Alfin -- excuse me.

18 Special Agent Alfin testified that it didn't do
19 anything at all until it was put on the computers in a
20 different state. Because of that, the computer was not
21 in the State of Virginia ever, nor was the installation
22 at in the State of Virginia, it cannot be equivalent to
23 a tracking device. Therefore, (b)(4) fails.

24 THE COURT: Does one have a reasonable
25 expectation of privacy to their Internet -- to their IP

1 address?

2 MR. ALFARO: Judge, I don't think that's what
3 this case is about. I mean, I think that's what the
4 government wants to make it about. First, so I don't
5 take up too much of your time --

6 THE COURT: Well, there can't be a violation if
7 there's no reasonable expectation of privacy.

8 MR. ALFARO: There's a reasonable expectation
9 of privacy in your computer and here's the illustration
10 I would like to point out to the judge --

11 THE COURT: I would agree, but there's been
12 testimony today from the special agent that the
13 computer, if we think of it as a house, was not rummaged
14 through, it wasn't searched; rather, it was -- it
15 harvested the address.

16 MR. ALFARO: And, your Honor, what I -- the
17 distinction that I would make is this: The Fourth
18 Amendment contemplates different protections. It's not
19 just in the information that the government is getting.
20 It's where and how. And I think the Supreme Court
21 precedent on that is very clear.

22 So here's the -- here's where I've divulged
23 that. The Supreme Court in Riley versus California said
24 you have a reasonable expectation in your electronic
25 device, in your cellphone.

1 The government responded with, well, all we
2 want to do is take the phone from his person, open up
3 the phone and just get the call logs. We can do that
4 because if some -- if we used a pen register and you're
5 conveying that to a third party, we can get that. And
6 the Court said, no, you can't do that because you're not
7 getting it from a third party; you're actually taking it
8 from the defendant. And it doesn't matter what you are
9 getting. The nature of the phone, the nature of the
10 evolution of technology and the privacy of -- the right
11 to privacy that we have in our technology, the Court
12 said, no, you cannot do that without a warrant.

13 So what the Supreme Court there is saying, we
14 don't care the type of information that you're getting;
15 it's how you're getting it.

16 And to add another layer to that, we see that
17 in the Supreme Court's analysis in Kyllo. There the
18 government is using technology that's not available to
19 the general public and that the Court there saw as
20 invasive. All that they were gathering was the heat
21 waves emanating from the house. And the government's --
22 I mean, the Supreme Court said we don't care what type
23 of information you're getting; you're getting it from
24 one of the most constitutionally protected areas that we
25 see and that's the house.

1 And to liken that to this case even better, the
2 government, one, did not collect this information from a
3 third party. I know that they got the IP address
4 information from the administrative subpoena, but before
5 that step, they needed to secure the IP address, and
6 they got directly from my client on his personal
7 computer while it was inside his house.

8 So that would be -- so the analogy here is
9 this: If they want my defendant's phone numbers, they
10 could install a pen register when he's conveying that to
11 a third party or when he's using the regular Internet.
12 But what they can't do is get that same information by
13 kicking the door down, using his AT&T phone bill and
14 then writing those numbers down.

15 So that is what this case is about, Judge.
16 It's not about getting some IP address from a third
17 party. It's about mass hacking of 100,000 individuals
18 where the government is directly putting software,
19 unbeknownst to them, on their computer. So I submit
20 that this case is about a reasonable expectation of
21 privacy that an individual has in the information in
22 their computer. Doesn't matter if it's an IP address.
23 It matters if it's an IP address from a third party but
24 not when taken directly from the defendant as in that
25 Riley case, Judge.

1 So because of that, that is what this case is
2 about. And I think we can all agree that a reasonable
3 person, or that society is not prepared to recognize as
4 reasonable no expectation that the government isn't
5 going to use this evidence to hack into your computer,
6 that they may have a valid reason -- we're investigating
7 child pornography -- but that doesn't allow them to
8 circumvent the Fourth Amendment or Rule 41(b), which
9 they knew they were running afoul of, Judge, and we know
10 that because of the testimony you heard today.

11 Before, in the early NITs, they asked in a
12 search warrant to properly locate it within this
13 judicial district or elsewhere. Then In Re case in
14 Texas is one of the first judges to say, no, I'm not
15 going to issue this warrant.

16 The government said, when he was giving his
17 closing argument, that the In Re case doesn't matter.
18 What's important here, why this matters, this case
19 matters is because the FBI didn't know where these
20 people were at. That's exactly what the In Re: Warrant
21 case was about. The judge read the warrant; didn't know
22 who this was going to be targeted to because the FBI did
23 not know where this single person was at. So it denied
24 it on Rule 41 grounds, Judge.

25 They also -- the government also said that the

1 defendant isn't prejudiced because all we got was the IP
2 address. I believe they make that in their motion.
3 That's not the test for prejudice, Judge. It's clear
4 that the test for prejudice was would this search have
5 happened had the rule been followed, and I think the
6 answer to that is clear.

7 So not only do we have a constitutional
8 infirmity because this case is not about the IP address;
9 it's about his computer --

10 THE COURT: Would they have obtained the IP
11 address if they had gone over to the district judge's
12 chambers and got that judge to sign the warrant?

13 MR. ALFARO: Would they have got the -- yeah,
14 they could have done that, Judge, but that doesn't
15 change the fact that they violated Rule 41. Just
16 because they could have, just because they could have
17 doesn't negate the 41 violation.

18 THE COURT: No, but it affects the prejudice
19 argument.

20 MR. ALFARO: Well, Judge, I don't think it
21 affects the prejudice argument because the definition of
22 prejudice per the Eighth Circuit is this: Had the rule,
23 Rule 41(b), been followed to the letter, would the
24 search have occurred. It's not, "Well, couldn't we have
25 got this information from somewhere else." That's not

1 the analysis that the Court makes. It's had the rule
2 been followed. And had the rule been followed, a
3 magistrate judge could not have exercised this, this
4 warrant. So I think it would be prejudicial to say, oh,
5 we could have got this some other way.

6 That's like saying, "Well, we could have got a
7 warrant to search your phone because we had -- we could
8 have got a warrant to search your phone, but we decided
9 not to do it." Well, just because they could have got a
10 warrant and didn't do it doesn't mean that the Fourth
11 Amendment isn't violated.

12 So because of that analysis and I think with
13 that understanding, had this Rule 41 been followed to
14 the letter, this judge would not have issued this
15 warrant because no warrant would have existed because
16 they would have said, no, I can't do that. Therefore,
17 this warrant would not have allowed the government to do
18 exactly what it did in this case.

19 Regarding reckless disregard of procedure,
20 Judge, I'm not alleging that the government is just
21 trying to skirt everyone's civil liberties. I think the
22 government has recognized they're in a position where
23 they had this new technology that no one really knows
24 about but them, and they need to execute it. But that
25 does not give carte blanche to violate these rules, and

1 I think what's important here is these other district
2 court cases have stated it flies in the face of this
3 good faith to say that the government can request a
4 warrant that so blatantly violates Rule 41(b) as acted
5 in good faith.

6 They knew that they had a hurdle after the In
7 Re: Warrant out of the Southern District of Texas,
8 meaning that judge denied a warrant because it didn't
9 subscribe to the jurisdictional requirements of Rule
10 41(b).

11 So the government proposed legislation citing
12 that exact case saying this is an unnecessary hurdle for
13 us to go over; so, let's change this. But before the
14 rule is changed, they seek a warrant that does exactly
15 what they just put on notice is not allowable: To issue
16 a warrant that is not tied to this jurisdictional
17 requirement under Rule 41(b).

18 Regarding that analysis, Judge, I would point
19 the Court to an additional case that is I think
20 persuasive, and I have a copy. It's United States of
21 America versus William Barber. The cite there is
22 5:15-CR-443 out of the District of Kansas. Now, this is
23 not a case involving the NIT, but the analysis I think
24 is similar.

25 Here the FBI requested a warrant for an e-mail

1 address from a district judge in Maryland. The warrant
2 was addressed to Google, which is in the Northern
3 District of California, for the contents of an e-mail.

4 Now, the face of the warrant said that
5 information was in Maryland, but the affidavit said the
6 information -- that the information was stored in
7 California.

8 A second warrant was issued, the same manner,
9 which led to the arrest of the defendant. The defendant
10 made the same exact Rule 41(b) argument there, and the
11 Court went on to talk about that this warrant violated
12 Rule 41(b) because a magistrate judge there did not --
13 in Maryland did not have the authority to issue a
14 warrant outside of its jurisdiction in another state in
15 California.

16 So not only was that a Rule 41(b) violation,
17 but the Court explicitly said that it finds persuasive
18 the cases that suggest that the good faith exception
19 does not apply to warrants that are invalid from their
20 inception.

21 So just like the argument in Arterbury and
22 Levin, Judge, I think that should this Court find a Rule
23 41(b) violation that the good faith exception does not
24 apply because Leon says nothing about what happens when
25 a warrant is void at its inception, meaning a void

1 that could -- a warrant that could have never existed in
2 the first place. And because of the reasons cited and
3 the cases that I've mentioned and in this Barber case, I
4 think the Court should be persuaded that the good faith
5 exception should not apply and that all the evidence and
6 all the fruit of that evidence should be suppressed.

7 Lastly, Judge, just to make a good record, I
8 recognize that no other Courts have agreed that the
9 warrant was not supported by probable cause. I will say
10 that it's troubling to us -- to me that Agent Alfin
11 recognized a discrepancy in the website and didn't
12 inform the affiant of such. And the reason I say that
13 is because although the government is correct that they
14 make a statement in a footnote in this multipage
15 affidavit for warrant that they would circumscribe
16 whenever they wanted to of who they -- of when they
17 would direct the NIT in requiring more affirmative
18 steps, the warrant specifically wanted to be allowed to
19 deploy the NIT whenever they logged in.

20 So I think what turns on the probable cause
21 then is what could the government prove to strengthen
22 that there's probable cause just by logging on, just by
23 entering the information and clicking okay that there
24 was sufficient probable cause that this site was
25 dedicated to child pornography.

1 You heard testimony that this site was actually
2 accessible through the regular Internet, that there are
3 indexes or things to do on Tor that index sites, and
4 it's possible that someone could have found this site
5 through these Tor search engines, or indexes. And when
6 we look at the page, the description obviously had
7 changed. We don't know the age of the female.

8 There's no argument that it meets a legal
9 definition of child pornography, and there's no argument
10 that they can prove that anyone -- that every single
11 person who got to that site knew what they were getting
12 into, Judge. And so for all those reasons, we request
13 that the judge suppress -- the Court suppress all the
14 evidence. Thank you, Judge.

15 THE COURT: Mr. Alfaro, thank you very much.
16 It was very well said.

17 The Court is going to take the motion under
18 advisement and we'll get a ruling out as quickly as we
19 can. Very much appreciate how well prepared everyone
20 was today. I do appreciate the people that have -- our
21 witnesses that have traveled from a great distance.

22 These are very significant, important issues
23 before the Court, and I certainly appreciate the efforts
24 that have been gone to, to present this testimony to the
25 Court today. We're adjourned.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(Proceedings adjourned at 5:54 p.m.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CERTIFICATE OF OFFICIAL REPORTER

I, Dana Hayden, Federal Official Realtime Court Reporter, in and for the United States District Court for the Western District of Arkansas, do hereby certify that pursuant to Section 753, Title 28, United States Code that the foregoing is a true and correct transcript of the stenographically reported proceedings held in the above-entitled matter and that the transcript page format is in conformance with the regulations of the Judicial Conference of the United States.

Dated this 8th day of July 2016.

Dana Hayden, CCR, RMR, CRR
Federal Official Court Reporter

<p>1</p> <p>1 [5] - 3:5, 20:18, 22:2, 22:4, 142:8</p> <p>1,000-mile-long [1] - 119:16</p> <p>100 [6] - 66:13, 102:15, 106:19, 154:18, 154:19, 169:22</p> <p>100,000 [20] - 65:1, 65:6, 65:7, 65:12, 65:13, 65:17, 65:18, 66:2, 66:5, 66:6, 66:7, 66:13, 67:4, 72:18, 72:20, 76:3, 78:6, 123:8, 124:17, 196:17</p> <p>12 [1] - 79:13</p> <p>128 [1] - 3:12</p> <p>129 [1] - 3:12</p> <p>13 [4] - 29:13, 37:6, 40:24, 42:10</p> <p>13-day [1] - 40:22</p> <p>132 [2] - 3:13, 3:15</p> <p>133 [2] - 3:13, 3:15</p> <p>135 [1] - 181:20</p> <p>14 [1] - 2:14</p> <p>15 [2] - 20:23, 93:17</p> <p>152 [1] - 2:21</p> <p>16 [1] - 108:10</p> <p>169 [1] - 2:21</p> <p>17 [1] - 29:14</p> <p>172 [2] - 136:11, 136:25</p> <p>172.30 [3] - 136:1, 136:21, 142:10</p> <p>172.30.blah [1] - 136:13</p> <p>174 [2] - 2:5, 2:6</p> <p>18 [4] - 29:8, 29:12, 39:12, 39:20</p> <p>183 [1] - 2:7</p> <p>19 [2] - 4:25, 5:4</p> <p>192.168 [1] - 138:21</p> <p>192.168-dot [1] - 138:24</p> <p>1980s [6] - 187:4, 188:16, 189:12, 190:11, 190:14, 190:21</p> <p>19th [6] - 25:2, 33:16, 34:11, 34:15, 35:6, 80:25</p> <p>1:08 [1] - 1:10</p>	<p>146:13</p> <p>20 [2] - 12:2, 126:8</p> <p>200,000 [1] - 78:4</p> <p>2000 [2] - 108:11, 108:12</p> <p>2002 [1] - 104:6</p> <p>2007 [5] - 104:8, 114:8, 114:19, 117:8, 125:14</p> <p>2009 [3] - 14:18, 181:20</p> <p>2012 [5] - 118:9, 121:10, 121:20, 121:22, 158:6</p> <p>2013 [4] - 104:8, 116:3, 122:1, 124:22</p> <p>2014 [14] - 14:19, 14:20, 18:7, 20:23, 25:1, 32:17, 33:4, 53:5, 53:6, 53:7, 99:9, 104:9, 115:1</p> <p>2015 [12] - 4:9, 25:2, 33:16, 34:11, 34:15, 36:5, 40:18, 40:19, 42:3, 73:16, 81:1, 81:2</p> <p>2016 [4] - 1:10, 2:3, 176:25, 205:12</p> <p>203 [1] - 2:8</p> <p>204 [1] - 2:9</p> <p>205 [1] - 2:10</p> <p>20th [5] - 40:18, 58:3, 81:2, 104:23, 133:13</p> <p>22 [2] - 3:5</p> <p>227 [1] - 176:25</p> <p>23 [4] - 1:10, 2:3, 111:3, 111:10</p> <p>24 [1] - 111:3</p> <p>249-9040 [1] - 1:15</p> <p>25 [3] - 3:6, 112:9</p> <p>27 [6] - 3:7, 86:22, 87:1, 87:2, 191:10</p> <p>28 [2] - 5:1, 205:6</p> <p>280 [1] - 1:19</p>	<p>35 [1] - 1:24</p> <p>3739 [1] - 1:19</p> <p>3:20 [1] - 93:19</p> <p>3:35 [1] - 93:19</p> <p>3rd [1] - 36:5</p> <p>4</p> <p>4 [5] - 3:8, 28:15, 31:15, 31:17, 166:18</p> <p>40 [1] - 188:17</p> <p>40-something [1] - 183:24</p> <p>409 [1] - 176:25</p> <p>41 [18] - 12:3, 12:23, 82:11, 83:8, 99:11, 175:19, 176:6, 177:6, 177:8, 178:3, 181:14, 182:22, 186:22, 186:24, 197:24, 198:15, 198:17, 199:13</p> <p>41(b) [10] - 13:1, 118:14, 190:19, 197:8, 198:23, 200:4, 201:10, 201:12, 201:16, 201:23</p> <p>41(b) [3] - 186:16, 200:10, 200:17</p> <p>41(b)(4) [1] - 12:23</p> <p>414 [1] - 1:14</p> <p>442-2306 [1] - 1:20</p> <p>46(a) [3] - 168:9, 183:25, 184:2</p> <p>479 [2] - 1:15, 1:20</p> <p>4th [2] - 40:18, 42:3</p> <p>5</p> <p>5 [3] - 34:8, 51:2, 55:9</p> <p>50 [1] - 2:14</p> <p>555 [1] - 181:20</p> <p>5:15 [1] - 174:15</p> <p>5:15-CR-443 [1] - 200:22</p> <p>5:15-CR-50087-001 [2] - 1:5, 4:4</p> <p>5:54 [1] - 204:1</p> <p>6</p> <p>69 [2] - 87:20, 88:4</p> <p>7</p> <p>7-Z-i-p [1] - 23:12</p> <p>7-Zip [7] - 23:11, 23:14, 23:18, 23:23, 23:24, 24:13, 51:11</p>	<p>70 [2] - 42:11, 148:7</p> <p>70.178 [6] - 139:20, 142:4, 142:8, 142:21, 147:11, 148:11</p> <p>72 [1] - 42:12</p> <p>72701 [1] - 1:25</p> <p>72703 [1] - 1:20</p> <p>72901 [1] - 1:14</p> <p>74 [1] - 42:12</p> <p>753 [1] - 205:6</p> <p>7z [4] - 22:23, 23:10, 51:6, 51:17</p> <p>8</p> <p>8 [1] - 160:14</p> <p>80 [1] - 2:15</p> <p>8th [1] - 205:12</p> <p>9</p> <p>9/11 [2] - 158:14, 159:2</p> <p>91 [1] - 2:15</p> <p>93 [1] - 2:16</p> <p>94 [2] - 2:16, 182:2</p> <p>96 [1] - 2:4</p> <p>97 [1] - 2:20</p> <p>9th [1] - 4:9</p> <p>A</p> <p>A-I-f-i-n [1] - 14:8</p> <p>abbreviation [4] - 29:16, 29:17, 29:18</p> <p>abiding [2] - 115:16, 122:23</p> <p>ability [9] - 36:20, 37:15, 84:23, 84:25, 88:19, 109:22, 145:19, 146:11, 190:14</p> <p>able [33] - 7:7, 16:20, 33:6, 33:7, 33:14, 40:21, 42:5, 43:4, 45:13, 47:13, 47:23, 61:1, 76:1, 77:5, 77:10, 79:1, 98:5, 102:1, 102:2, 106:22, 107:8, 116:14, 118:19, 122:6, 141:15, 141:21, 143:12, 145:4, 150:9, 173:5, 174:1, 183:4, 192:10</p> <p>above-entitled [1] - 205:9</p> <p>abrasive [1] - 177:13</p> <p>absolutely [3] - 36:9,</p>	<p>176:18, 180:22</p> <p>abuse [4] - 7:20, 30:25, 31:12, 157:12</p> <p>abused [1] - 30:13</p> <p>academy [1] - 15:14</p> <p>accept [2] - 105:22, 105:23</p> <p>access [35] - 7:18, 8:10, 9:5, 16:16, 17:4, 17:5, 18:23, 19:2, 19:9, 20:3, 24:24, 37:25, 42:18, 42:19, 45:13, 46:17, 53:17, 53:21, 53:25, 58:23, 58:25, 69:13, 83:25, 85:19, 88:21, 95:25, 96:8, 96:10, 100:15, 101:1, 101:6, 119:13, 163:20, 163:23, 168:3</p> <p>accessed [14] - 10:17, 15:21, 17:1, 17:2, 18:10, 42:6, 42:11, 64:6, 71:25, 72:6, 72:18, 76:4, 86:5, 101:7</p> <p>accesses [1] - 17:8</p> <p>accessible [9] - 16:3, 53:11, 103:7, 103:11, 103:18, 164:18, 175:4, 203:2</p> <p>accessing [7] - 22:12, 27:4, 43:25, 152:8, 179:22, 181:22, 182:9</p> <p>accident [1] - 151:5</p> <p>accidentally [1] - 20:15</p> <p>accomplished [1] - 182:8</p> <p>according [6] - 9:12, 10:13, 11:3, 41:19, 122:20, 177:10</p> <p>account [22] - 22:14, 22:15, 25:18, 25:19, 25:20, 25:22, 25:23, 26:9, 26:16, 33:25, 34:2, 40:15, 40:16, 42:1, 44:22, 44:23, 46:15, 66:15, 67:1, 74:14, 146:12, 156:18</p> <p>accounts [18] - 40:9, 45:22, 65:2, 65:6, 65:7, 65:11, 65:15, 65:17, 66:2, 66:7, 66:14, 71:25, 72:18, 76:3, 76:6, 78:4, 150:9</p>
<p>2</p> <p>2 [6] - 3:6, 22:7, 25:8, 25:10, 142:16,</p>	<p>3</p> <p>3 [5] - 3:7, 26:4, 27:6, 27:8, 166:17</p> <p>30 [1] - 42:4</p> <p>30-minute [1] - 24:13</p> <p>30-page [1] - 12:2</p> <p>31 [4] - 3:8, 111:5, 111:10</p> <p>31st [1] - 108:15</p> <p>32 [3] - 111:5, 111:10, 112:4</p> <p>33 [4] - 111:5, 111:10, 112:4, 181:13</p> <p>33-page [1] - 175:13</p>			

<p>accuracy [1] - 78:18</p> <p>accurate [7] - 38:24, 42:7, 58:5, 78:15, 100:10, 159:19, 160:23</p> <p>accurately [2] - 132:12, 145:24</p> <p>accusing [1] - 160:21</p> <p>achieve [1] - 170:17</p> <p>ACLU [7] - 6:4, 98:1, 155:12, 155:16, 155:17, 155:24, 156:4</p> <p>ACLU's [4] - 97:23, 154:7, 154:10, 155:22</p> <p>act [1] - 192:1</p> <p>acted [4] - 36:17, 37:13, 180:22, 200:4</p> <p>acting [1] - 39:15</p> <p>action [1] - 36:22</p> <p>actions [2] - 39:14, 40:19</p> <p>activate [1] - 38:13</p> <p>activated [2] - 184:21, 191:20</p> <p>activating [4] - 149:20, 150:2, 150:7, 184:7</p> <p>active [6] - 18:10, 34:13, 46:2, 63:6, 65:2, 75:9</p> <p>actively [7] - 19:24, 33:24, 46:3, 68:1, 87:6, 155:14, 155:15</p> <p>activist [2] - 157:7, 157:9</p> <p>activities [5] - 10:2, 10:4, 12:24, 45:22, 102:6</p> <p>activity [8] - 27:25, 40:6, 43:5, 45:3, 139:11, 174:25, 175:17, 181:16</p> <p>actual [9] - 38:1, 42:1, 65:22, 85:9, 89:8, 149:20, 150:2, 150:8, 190:15</p> <p>adapter [2] - 44:6, 44:9</p> <p>add [1] - 195:16</p> <p>added [1] - 125:3</p> <p>addition [3] - 93:13, 95:17, 95:21</p> <p>additional [2] - 17:12, 200:19</p> <p>additionally [2] - 86:16, 94:21</p> <p>address [212] - 5:4, 9:9, 9:11, 10:19,</p>	<p>10:20, 10:22, 11:16, 16:18, 17:9, 17:13, 26:18, 26:20, 26:22, 26:23, 41:11, 41:12, 42:16, 42:17, 42:20, 42:24, 43:3, 43:4, 43:8, 43:13, 43:18, 43:21, 43:24, 44:1, 44:2, 44:4, 44:5, 44:11, 44:13, 44:15, 46:21, 46:24, 47:5, 47:7, 47:10, 47:11, 47:14, 47:22, 47:24, 48:1, 48:2, 48:4, 48:10, 48:13, 53:15, 63:3, 74:9, 74:14, 77:4, 77:6, 77:12, 84:16, 88:18, 89:4, 89:14, 89:21, 89:23, 90:2, 90:8, 90:20, 92:11, 92:16, 92:17, 92:23, 92:25, 93:1, 93:2, 94:16, 96:1, 103:21, 105:9, 105:14, 110:1, 113:4, 113:13, 127:5, 127:11, 128:16, 129:9, 129:10, 129:13, 129:14, 129:15, 129:18, 129:20, 129:25, 130:1, 130:2, 130:7, 130:8, 130:10, 130:12, 130:13, 130:16, 133:7, 134:17, 134:18, 134:20, 135:22, 135:23, 135:24, 135:25, 136:1, 136:2, 136:8, 136:9, 136:10, 136:11, 136:21, 136:25, 137:1, 137:9, 137:10, 137:23, 137:24, 138:3, 138:12, 138:14, 138:21, 139:1, 139:2, 139:12, 139:14, 139:15, 139:16, 139:19, 139:20, 140:7, 140:21, 141:1, 141:6, 141:7, 141:8, 141:12, 141:13, 141:15, 142:1, 142:3, 142:4, 142:10, 142:21, 144:2, 144:18, 144:21, 145:5, 146:12, 146:14, 146:15, 147:3,</p>	<p>147:11, 147:13, 147:21, 148:1, 148:2, 148:7, 148:10, 148:13, 148:15, 148:17, 148:19, 148:21, 148:23, 148:24, 148:25, 149:2, 149:4, 149:12, 149:14, 149:20, 150:2, 150:8, 150:10, 150:13, 150:16, 150:19, 151:1, 151:11, 151:13, 151:16, 164:13, 180:2, 180:8, 182:16, 183:16, 194:1, 194:15, 196:3, 196:5, 196:16, 196:22, 196:23, 198:2, 198:8, 198:11, 201:1</p> <p>addressed [1] - 201:2</p> <p>addresses [22] - 9:20, 45:17, 53:25, 74:22, 74:23, 75:2, 75:6, 75:19, 76:18, 77:9, 77:13, 77:16, 134:19, 138:16, 138:17, 138:18, 138:19, 138:22, 139:22, 141:24, 141:25, 142:6</p> <p>addressing [1] - 179:20</p> <p>adds [1] - 23:16</p> <p>adjourned [2] - 203:25, 204:1</p> <p>Adjournment..... [1] - 2:9</p> <p>administrative [16] - 10:20, 11:15, 33:25, 34:2, 43:6, 45:17, 47:14, 74:12, 75:4, 90:5, 90:17, 141:16, 142:16, 145:5, 147:14, 196:4</p> <p>administrator [20] - 20:24, 21:1, 21:7, 21:15, 21:17, 21:23, 26:19, 32:16, 33:21, 35:2, 35:6, 36:19, 46:11, 53:16, 54:21, 55:3, 59:14, 103:7, 103:15, 175:7</p> <p>administrator's [5] - 34:14, 35:9, 54:7, 55:7, 80:21</p>	<p>administrators [2] - 46:15, 59:14</p> <p>admissions [2] - 11:9, 49:7</p> <p>admit [2] - 128:22, 132:17</p> <p>admitted [4] - 22:2, 25:8, 27:6, 31:15</p> <p>ADMITTED [2] - 3:4, 3:11</p> <p>adopt [1] - 187:25</p> <p>ads [1] - 180:13</p> <p>advanced [2] - 106:18, 175:17</p> <p>advertise [3] - 21:18, 27:23, 45:2</p> <p>advertised [3] - 18:8, 27:19, 70:22</p> <p>advertisement [4] - 15:8, 18:12, 28:10, 35:16</p> <p>advertising [1] - 20:7</p> <p>advise [2] - 7:10, 49:11</p> <p>advisement [1] - 203:18</p> <p>advisement..... [1] - 2:8</p> <p>advises [1] - 162:9</p> <p>advisory [1] - 99:8</p> <p>affects [2] - 198:18, 198:21</p> <p>affiant [3] - 56:7, 81:9, 202:12</p> <p>affidavit [8] - 9:12, 35:18, 36:2, 78:3, 183:23, 184:3, 201:5, 202:15</p> <p>affidavits [1] - 100:2</p> <p>afforded [1] - 17:23</p> <p>affords [2] - 16:7, 17:6</p> <p>afield [2] - 126:17, 137:20</p> <p>afoul [1] - 197:9</p> <p>afterwards [1] - 69:25</p> <p>age [3] - 29:12, 188:21, 203:7</p> <p>aged [1] - 29:13</p> <p>agencies [4] - 21:7, 72:23, 101:20, 171:18</p> <p>agency [1] - 53:8</p> <p>Agent [37] - 5:15, 13:17, 15:21, 22:6, 27:10, 38:23, 50:19, 70:5, 93:23, 93:25, 94:4, 100:9, 100:24, 102:8, 103:1, 104:21, 104:24, 106:1, 113:4,</p>	<p>127:15, 129:17, 129:19, 130:4, 130:13, 131:8, 133:6, 134:22, 137:8, 137:21, 138:11, 143:3, 143:8, 148:13, 150:4, 183:4, 193:18, 202:10</p> <p>agent [16] - 5:17, 5:20, 13:18, 14:10, 14:17, 15:6, 54:12, 54:19, 65:20, 71:24, 80:20, 92:6, 93:16, 96:23, 102:22, 194:12</p> <p>AGENT [2] - 5:21, 5:23</p> <p>agent's [1] - 71:21</p> <p>agents [5] - 45:13, 49:1, 161:2, 179:13, 182:2</p> <p>ago [5] - 26:7, 108:11, 116:16, 123:18, 156:12</p> <p>agree [6] - 163:25, 165:13, 166:4, 166:10, 194:11, 197:2</p> <p>agreed [2] - 193:1, 202:8</p> <p>ahead [2] - 50:9, 147:25</p> <p>aid [1] - 55:17</p> <p>aided [1] - 55:15</p> <p>aiming [1] - 169:9</p> <p>airline [1] - 158:13</p> <p>airlines [1] - 159:12</p> <p>airplane [1] - 69:13</p> <p>akin [1] - 79:7</p> <p>Albany [3] - 14:19, 14:23, 14:24</p> <p>Alfaro [40] - 1:18, 4:6, 5:25, 6:10, 50:9, 50:15, 50:19, 51:5, 52:23, 56:20, 57:1, 66:19, 68:20, 70:4, 71:7, 76:13, 91:1, 91:16, 96:19, 97:2, 102:20, 119:6, 120:2, 126:18, 126:21, 127:19, 130:20, 132:20, 133:5, 133:24, 141:18, 142:23, 142:25, 143:24, 151:24, 153:19, 169:17, 173:15, 183:13, 203:15</p> <p>ALFARO [81] - 6:2, 22:3, 25:9, 27:7, 31:16, 50:16, 50:18,</p>
---	--	---	---	--

52:13, 52:22, 56:22, 56:24, 64:20, 66:20, 66:23, 68:22, 69:9, 71:4, 71:21, 76:24, 78:24, 79:19, 80:6, 80:11, 91:2, 91:5, 91:13, 93:4, 96:20, 97:4, 97:12, 97:16, 111:19, 112:2, 118:12, 119:19, 119:23, 126:20, 127:17, 128:21, 128:24, 130:18, 132:12, 133:2, 133:12, 133:16, 141:19, 144:11, 146:25, 147:17, 151:25, 153:13, 159:25, 169:18, 169:20, 173:14, 174:6, 174:13, 174:20, 183:14, 183:16, 184:2, 184:17, 185:12, 185:19, 187:1, 187:19, 187:24, 189:13, 189:20, 190:9, 190:16, 191:2, 191:12, 192:7, 192:22, 193:5, 194:2, 194:8, 194:16, 198:13, 198:20

Alfaro's [3] - 12:2, 69:20, 102:17

Alfaro..... [1] - 2:21

Alfaro..... [3] - 2:14, 2:15, 2:20

ALFIN [3] - 5:21, 5:23, 14:2

Alfin [37] - 2:13, 5:15, 5:22, 13:17, 14:7, 15:21, 22:6, 27:10, 38:23, 50:19, 70:5, 93:23, 93:25, 94:4, 100:24, 102:8, 104:22, 104:25, 106:1, 127:15, 129:17, 129:19, 130:4, 130:14, 131:8, 133:7, 134:23, 137:8, 137:21, 138:11, 143:3, 143:8, 148:13, 183:4, 193:17, 193:18, 202:10

Alfin's [4] - 100:9, 102:22, 103:1, 113:5

allegation [1] - 4:10

allegations [1] - 7:13

alleged [2] - 7:17, 142:9

allegedly [2] - 10:16, 60:10

alleging [2] - 76:21, 199:20

Allen [1] - 4:3

ALLEN [1] - 1:6

allow [7] - 9:2, 37:18, 60:17, 164:15, 164:22, 187:10, 197:7

allowable [1] - 200:15

allowed [11] - 20:2, 58:23, 85:13, 164:21, 173:19, 181:7, 185:2, 185:3, 186:7, 199:17, 202:18

allowing [1] - 7:18

allows [6] - 10:3, 42:25, 43:20, 60:21, 138:13, 175:22

alone [1] - 90:20

alterations [1] - 94:20

altered [2] - 95:5, 96:4

alternatively [1] - 18:3

amalgamation [1] - 39:5

Amazon [1] - 175:3

Amendment [11] - 13:13, 68:14, 145:24, 156:14, 156:16, 158:2, 176:8, 177:17, 194:18, 197:8, 199:11

America [1] - 200:21

AMERICA [1] - 1:3

American [1] - 97:22

amount [2] - 73:17, 86:24

analogies [1] - 190:9

analogous [1] - 187:3

analogy [7] - 87:16, 88:5, 88:7, 88:12, 140:24, 190:21, 196:8

analysis [9] - 186:7, 186:11, 187:25, 193:15, 195:17, 199:1, 199:12, 200:18, 200:23

analyze [3] - 94:14, 173:9, 173:25

analyzed [6] - 73:6, 75:14, 94:19, 122:8, 123:24, 186:18

angle [3] - 78:18,

79:24, 80:4

animals [2] - 30:25, 118:5

anonymity [3] - 10:4, 74:24, 102:3

anonymous [5] - 16:10, 90:1, 90:2, 122:22, 122:23

answer [21] - 52:10, 52:18, 52:21, 60:18, 71:15, 71:17, 72:12, 72:14, 73:21, 73:22, 74:4, 74:21, 80:10, 82:1, 124:23, 149:24, 153:19, 154:23, 183:5, 183:10, 198:6

answered [4] - 66:11, 153:18, 154:25, 192:9

answering [1] - 71:17

answers [1] - 135:12

ANTHONY [1] - 1:6

Anthony [2] - 4:3, 47:17

apologize [4] - 66:24, 67:7, 133:12, 147:25

appear [3] - 22:17, 23:4, 142:6

appeared [3] - 35:24, 36:4, 150:13

appearing [2] - 29:17, 97:25

application [26] - 9:12, 37:21, 37:22, 55:13, 55:16, 78:3, 82:3, 104:20, 104:23, 111:11, 113:20, 113:22, 114:2, 114:19, 115:24, 121:18, 123:4, 124:12, 129:6, 143:25, 175:13, 176:13, 179:14, 184:21, 185:21, 187:14

applications [3] - 82:7, 104:11, 125:25

applied [3] - 10:23, 79:6, 178:6

apply [5] - 182:2, 192:11, 201:19, 201:24, 202:5

applying [1] - 181:4

appointment [1] - 133:23

appreciate [9] - 28:13, 50:6, 50:13, 126:15, 156:5, 174:16, 203:19, 203:20,

203:23

apprehended [1] - 73:19

approach [4] - 67:10, 67:14, 127:17, 130:18

approaching [2] - 110:25, 176:9

appropriate [2] - 6:8, 115:19

approval [2] - 83:2, 181:15

approved [1] - 81:4

approving [1] - 81:6

April [3] - 4:15, 6:12, 14:17

AR [1] - 1:14

archives [2] - 23:25, 24:9

area [4] - 47:23, 48:3, 48:15, 176:3

areas [5] - 17:24, 30:5, 84:11, 152:17, 195:24

arena [1] - 99:2

argue [1] - 187:2

Argument [2] - 2:6, 2:7

ARGUMENT [2] - 174:23, 183:15

argument [19] - 79:3, 118:20, 119:7, 145:7, 174:19, 178:15, 179:8, 179:16, 184:11, 184:16, 184:18, 184:19, 197:17, 198:19, 198:21, 201:10, 201:21, 203:8, 203:9

arguments [2] - 118:12, 183:17

ARKANSAS [2] - 1:1, 1:10

Arkansas [27] - 1:19, 1:20, 1:25, 7:15, 10:24, 16:18, 47:18, 47:21, 48:3, 48:21, 48:24, 60:10, 60:12, 68:17, 77:7, 110:6, 116:13, 127:2, 127:4, 146:16, 156:9, 156:10, 157:16, 171:9, 179:6, 189:19, 205:5

arm [1] - 67:7

arrest [2] - 35:1, 201:9

arrested [3] - 33:15, 36:19, 73:19

arrived [1] - 25:13

arriving [1] - 44:24

art [3] - 109:13, 114:4, 117:23

Arterbury [2] - 188:1, 201:21

article [1] - 125:17

articulate [1] - 76:25

articulated [1] - 116:5

aside [2] - 24:18, 180:20

aspect [2] - 77:1, 192:23

aspects [1] - 81:25

assigned [10] - 14:11, 14:19, 14:20, 14:24, 42:21, 89:14, 137:10, 139:2, 141:2, 141:7

assist [1] - 76:22

assisted [1] - 81:5

associate [1] - 77:15

Associated [3] - 114:12, 115:2, 125:16

associated [8] - 23:2, 43:5, 44:5, 44:11, 47:12, 50:25, 52:25, 156:19

assume [6] - 60:20, 147:22, 184:20, 184:23, 190:14, 192:18

assumed [3] - 75:15, 148:16, 150:14

assuming [2] - 5:11, 191:2

assurances [1] - 144:15

assured [1] - 69:10

AT&T [2] - 42:22, 196:13

attach [2] - 9:7, 167:23

attached [9] - 10:16, 93:9, 182:15, 187:18, 188:13, 190:4, 192:3, 192:19, 193:1

attachment [4] - 41:8, 63:3, 84:2, 85:7

attack [5] - 78:18, 80:5, 117:24, 118:1, 177:21

attacking [4] - 78:21, 146:5, 146:7, 147:1

attacks [1] - 123:7

attempt [7] - 20:17, 32:15, 37:6, 59:15, 70:7, 79:10, 88:22

attempted [1] - 65:3

<p>attempting [5] - 37:25, 38:19, 52:18, 87:17, 103:5</p> <p>attempts [3] - 20:3, 100:17, 105:16</p> <p>attend [4] - 6:17, 6:18, 159:24, 160:5</p> <p>attended [1] - 15:15</p> <p>attorney [3] - 155:5, 170:11, 185:22</p> <p>Attorney's [2] - 1:13, 8:16</p> <p>audience [1] - 133:17</p> <p>AUDIENCE [2] - 133:18, 133:22</p> <p>August [6] - 18:7, 25:1, 32:17, 53:4, 53:6, 122:1</p> <p>authorities [1] - 103:6</p> <p>authority [17] - 8:18, 13:2, 38:15, 82:12, 82:17, 83:9, 85:8, 85:12, 86:1, 99:12, 119:18, 175:11, 187:16, 188:3, 191:14, 201:13</p> <p>authorization [4] - 81:19, 180:23, 181:4, 181:25</p> <p>authorize [4] - 116:4, 168:2, 185:6, 186:9</p> <p>authorized [12] - 47:4, 59:7, 59:10, 82:15, 99:18, 175:23, 178:15, 180:25, 181:5, 185:13, 186:12, 186:24</p> <p>authorizing [5] - 113:21, 177:1, 184:6, 185:8, 186:2</p> <p>automatically [1] - 59:8</p> <p>autopilot [1] - 183:6</p> <p>available [8] - 19:5, 23:15, 31:10, 37:17, 71:18, 165:14, 172:17, 195:18</p> <p>Avenue [1] - 1:14</p> <p>average [1] - 162:22</p> <p>avoid [1] - 49:22</p> <p>avoiding [1] - 175:15</p> <p>aware [18] - 18:6, 44:18, 57:5, 78:4, 79:4, 80:1, 81:18, 118:22, 155:19, 164:25, 165:2, 165:5, 165:7, 165:8, 167:2, 167:22, 168:4, 176:5</p> <p>awkward [1] - 62:1</p>	<p style="text-align: center;">B</p> <p>b)(2) [1] - 12:23</p> <p>b)(4) [7] - 186:24, 188:2, 191:24, 192:11, 193:12, 193:23</p> <p>babies [1] - 157:12</p> <p>bachelor's [1] - 98:11</p> <p>background [3] - 46:5, 76:13, 106:4</p> <p>backwards [1] - 51:2</p> <p>bad [4] - 146:8, 157:25, 163:11, 171:6</p> <p>bag [2] - 149:6, 151:6</p> <p>balance [2] - 153:5, 154:13</p> <p>bans [1] - 19:24</p> <p>barber [2] - 200:21, 202:3</p> <p>based [15] - 21:5, 23:1, 24:18, 26:12, 29:6, 39:19, 66:25, 69:18, 69:19, 96:13, 105:2, 107:25, 111:17, 116:11, 177:20</p> <p>basket [1] - 187:11</p> <p>bearing [1] - 39:1</p> <p>bears [1] - 13:6</p> <p>became [2] - 18:10, 81:13</p> <p>become [1] - 18:6</p> <p>becomes [1] - 192:3</p> <p>bed [1] - 161:22</p> <p>beeper [3] - 188:13, 191:15, 191:16</p> <p>beers [1] - 161:14</p> <p>BEFORE [1] - 1:9</p> <p>began [4] - 33:10, 33:11, 55:23, 80:25</p> <p>begin [1] - 86:15</p> <p>beginning [1] - 49:16</p> <p>behind [7] - 87:13, 87:14, 106:5, 138:13, 144:5, 146:14, 146:22</p> <p>belief [2] - 72:13, 73:24</p> <p>believes [2] - 142:3, 148:9</p> <p>belonged [1] - 48:2</p> <p>below [3] - 22:22, 30:19, 30:20</p> <p>bench [1] - 70:3</p> <p>Bench [1] - 67:22</p> <p>benefit [2] - 17:12, 171:21</p> <p>benefits [5] - 17:7,</p>	<p>17:23, 23:17, 91:17, 170:2</p> <p>Benton [4] - 47:18, 47:21, 48:21, 146:16</p> <p>best [3] - 76:24, 132:15, 181:13</p> <p>bestiality [1] - 30:18</p> <p>better [13] - 28:12, 38:13, 50:8, 71:8, 80:4, 91:15, 119:7, 170:18, 170:19, 171:1, 181:7, 196:1</p> <p>between [14] - 3:15, 14:18, 29:13, 32:17, 42:2, 42:3, 125:23, 131:9, 132:2, 134:15, 137:2, 166:15, 171:25</p> <p>bias [2] - 160:1, 160:2</p> <p>big [5] - 13:3, 101:13, 131:22, 161:12, 176:20</p> <p>big-picture [1] - 13:3</p> <p>bill [1] - 196:13</p> <p>billed [1] - 122:21</p> <p>billions [1] - 54:3</p> <p>Bing [2] - 19:21, 70:16</p> <p>bit [14] - 38:15, 68:15, 72:3, 104:9, 113:13, 127:10, 127:15, 130:15, 131:9, 139:9, 153:4, 153:24, 154:13, 179:15</p> <p>black [5] - 29:22, 29:23, 30:1, 121:6, 176:4</p> <p>blacklisted [1] - 20:3</p> <p>blah [8] - 136:13, 188:4, 188:5</p> <p>blah-blah [4] - 136:13, 188:4, 188:5</p> <p>blanche [1] - 199:25</p> <p>blank [3] - 150:6, 185:23, 185:24</p> <p>blatantly [1] - 200:4</p> <p>blend [1] - 102:2</p> <p>blocked [1] - 87:23</p> <p>Blvd [1] - 1:19</p> <p>board [8] - 22:22, 23:5, 26:19, 27:15, 51:19, 51:25, 52:14, 52:25</p> <p>board-style [1] - 27:15</p> <p>boarding [5] - 158:13, 159:2, 159:3, 159:4, 159:5</p> <p>boards [1] - 7:20</p> <p>bodies [1] - 99:4</p> <p>bomb [1] - 114:15</p>	<p>Bondage [1] - 30:16</p> <p>border [1] - 193:3</p> <p>bottom [1] - 27:2</p> <p>bounce [1] - 101:3</p> <p>box [2] - 30:1, 97:10</p> <p>boxes [1] - 103:15</p> <p>boys [2] - 29:8, 29:25</p> <p>branch [1] - 90:15</p> <p>break [5] - 23:20, 50:11, 94:14, 115:15, 135:6</p> <p>breakdown [1] - 62:8</p> <p>breaks [1] - 145:8</p> <p>breast [1] - 29:10</p> <p>brief [5] - 93:23, 111:8, 114:17, 175:19, 175:24</p> <p>briefed [1] - 49:18</p> <p>briefing [1] - 5:5</p> <p>briefly [8] - 15:25, 16:1, 53:13, 98:9, 100:8, 144:12, 169:23, 183:16</p> <p>briefs [1] - 174:16</p> <p>bring [2] - 119:19, 123:2</p> <p>broad [1] - 12:15</p> <p>broadband [1] - 137:11</p> <p>broader [2] - 38:15, 85:9</p> <p>broken [1] - 144:6</p> <p>BROOKS [1] - 1:9</p> <p>Brooks [1] - 38:23</p> <p>brought [5] - 58:12, 159:20, 161:1, 165:3, 183:3</p> <p>browse [2] - 46:3, 100:12</p> <p>browser [36] - 16:11, 18:24, 18:25, 19:4, 53:17, 57:9, 70:6, 70:25, 100:6, 100:11, 100:15, 100:18, 100:20, 100:23, 101:2, 103:22, 105:7, 105:13, 105:14, 105:17, 107:2, 107:5, 107:12, 107:13, 107:15, 107:17, 107:25, 109:5, 109:6, 115:12, 117:11, 121:3, 121:12, 122:14, 136:12, 174:5</p> <p>browser's [1] - 107:25</p> <p>browsers [2] - 106:11, 115:16</p>	<p>brush [1] - 12:15</p> <p>Buchanan [4] - 55:25, 56:11, 57:2, 186:8</p> <p>bucket [1] - 190:23</p> <p>Budget [1] - 171:12</p> <p>build [1] - 106:14</p> <p>building [1] - 144:7</p> <p>bulk [2] - 81:7, 123:6</p> <p>bunch [7] - 28:22, 31:19, 101:3, 117:20, 129:9, 131:23</p> <p>burden [1] - 13:6</p> <p>Bureau [2] - 14:10, 14:15</p> <p>burned [1] - 113:6</p> <p>business [5] - 10:2, 43:15, 83:4, 86:18, 154:10</p> <p>BY [11] - 14:5, 50:18, 80:19, 91:5, 93:8, 94:3, 97:16, 152:5, 169:20, 174:23, 183:15</p> <p>bypass [2] - 115:11, 158:22</p> <p style="text-align: center;">C</p> <p>cake [1] - 171:24</p> <p>California [5] - 179:6, 194:23, 201:3, 201:7, 201:15</p> <p>caller [2] - 87:19, 87:22</p> <p>candor [1] - 126:14</p> <p>candy [3] - 21:10, 21:15, 21:20</p> <p>cannot [13] - 16:15, 17:10, 136:11, 162:9, 165:24, 170:3, 170:4, 170:15, 170:22, 170:23, 178:4, 193:22, 195:12</p> <p>capabilities [4] - 70:16, 70:19, 70:20, 95:7</p> <p>capability [6] - 16:10, 19:2, 63:25, 84:21, 84:22, 96:4</p> <p>capable [2] - 7:9, 61:24</p> <p>capacity [3] - 97:25, 131:4, 156:4</p> <p>captured [1] - 137:4</p> <p>captures [1] - 24:15</p> <p>car [3] - 188:8, 188:17, 190:22</p> <p>card [3] - 44:7, 113:7</p>
--	---	--	--	--

<p>care [6] - 5:12, 156:17, 158:1, 195:14, 195:22</p> <p>Carnegie [1] - 116:17</p> <p>Carolina [15] - 6:12, 8:1, 33:8, 34:5, 36:11, 36:12, 57:17, 57:21, 57:22, 58:9, 58:21, 187:5, 188:18, 188:25, 193:4</p> <p>carte [1] - 199:25</p> <p>Case [1] - 14:13</p> <p>case [122] - 4:2, 5:18, 7:4, 12:18, 15:6, 18:2, 35:20, 37:11, 37:20, 44:18, 46:8, 47:17, 48:20, 60:9, 60:23, 62:19, 64:18, 65:24, 67:24, 68:6, 68:16, 73:5, 77:3, 81:11, 88:13, 98:24, 99:14, 99:15, 99:25, 100:1, 103:1, 104:21, 105:3, 114:8, 114:10, 114:16, 114:19, 115:8, 116:3, 116:8, 116:11, 116:21, 117:8, 117:9, 117:10, 117:20, 118:9, 118:13, 120:13, 120:14, 121:10, 121:13, 121:18, 121:19, 121:21, 121:22, 122:11, 122:18, 125:14, 130:4, 137:15, 141:14, 142:15, 144:3, 146:15, 162:21, 167:19, 167:20, 172:20, 172:22, 173:1, 173:5, 173:7, 173:12, 174:4, 175:15, 175:23, 176:1, 176:2, 176:14, 176:15, 176:17, 176:19, 177:18, 177:23, 178:6, 178:12, 178:13, 178:22, 178:25, 179:24, 180:22, 181:8, 181:19, 181:20, 182:1, 182:24, 183:1, 188:1, 188:2, 192:9, 194:3, 196:1, 196:15, 196:20, 196:25, 197:1,</p>	<p>197:13, 197:17, 197:18, 197:21, 198:8, 199:18, 200:12, 200:19, 200:23, 202:3</p> <p>CASE [1] - 1:5</p> <p>cases [21] - 64:19, 65:11, 68:1, 68:2, 83:24, 105:1, 116:12, 117:3, 119:24, 156:16, 156:24, 165:2, 165:3, 165:6, 166:7, 172:18, 183:3, 186:20, 200:2, 201:18, 202:3</p> <p>categorical [5] - 85:13, 86:8, 89:3, 89:17, 90:16</p> <p>categorically [3] - 83:17, 84:9, 145:25</p> <p>categories [2] - 31:19, 63:1</p> <p>category [1] - 30:1</p> <p>caught [4] - 122:4, 123:23, 168:22, 172:23</p> <p>caused [1] - 77:25</p> <p>cautioned [1] - 26:19</p> <p>CCR [2] - 1:23, 205:17</p> <p>cellphone [2] - 44:9, 194:25</p> <p>cellphones [2] - 126:2, 138:7</p> <p>Center [1] - 99:21</p> <p>certain [13] - 4:18, 4:22, 11:19, 12:5, 49:18, 76:14, 109:16, 112:7, 127:3, 144:13, 144:14, 145:2, 161:15</p> <p>certainly [11] - 9:23, 23:14, 53:2, 54:15, 73:21, 73:24, 83:21, 115:1, 159:6, 174:1, 203:23</p> <p>certainty [1] - 64:1</p> <p>CERTIFICATE [1] - 205:1</p> <p>Certificate..... [1] - 2:10</p> <p>certified [2] - 15:18, 15:19</p> <p>certify [1] - 205:5</p> <p>cetera [1] - 29:25</p> <p>chain [7] - 11:6, 11:13, 90:3, 145:7, 145:8, 146:3, 161:24</p> <p>challenging [1] -</p>	<p>76:20</p> <p>chambers [2] - 135:15, 198:12</p> <p>chance [5] - 79:23, 124:15, 124:18, 153:14, 153:15</p> <p>change [17] - 21:2, 34:23, 34:25, 35:8, 35:14, 44:12, 56:11, 61:10, 63:21, 135:3, 143:10, 150:18, 175:25, 176:1, 176:4, 198:15, 200:13</p> <p>changed [32] - 34:9, 34:12, 34:16, 56:17, 61:21, 64:3, 80:7, 136:7, 136:10, 136:11, 137:2, 139:9, 139:12, 139:14, 139:17, 139:19, 139:23, 141:10, 141:11, 143:2, 148:20, 148:24, 148:25, 150:16, 150:17, 151:12, 151:13, 151:16, 164:13, 172:14, 200:14, 203:7</p> <p>changes [9] - 44:14, 61:12, 61:16, 61:18, 61:24, 87:13, 99:10, 135:5, 154:6</p> <p>characterization [1] - 102:17</p> <p>charged [4] - 4:10, 4:12, 75:12, 121:14</p> <p>Charleston [1] - 6:12</p> <p>chase [1] - 161:11</p> <p>chat [4] - 51:20, 51:21, 51:23, 52:25</p> <p>check [1] - 103:15</p> <p>child [61] - 4:11, 4:14, 7:19, 7:20, 11:18, 15:1, 15:9, 15:21, 17:22, 18:9, 18:13, 19:14, 19:24, 20:7, 20:10, 21:13, 21:16, 23:2, 23:4, 23:6, 23:7, 23:10, 23:21, 23:24, 24:20, 26:13, 27:24, 28:7, 28:11, 29:11, 30:7, 30:18, 30:24, 31:4, 31:5, 31:12, 32:4, 35:17, 38:1, 38:20, 41:1, 49:8, 51:9, 52:5, 53:1, 64:13, 70:22, 75:9, 75:14, 88:22,</p>	<p>157:11, 182:11, 187:6, 187:13, 188:19, 190:8, 190:11, 197:7, 202:25, 203:9</p> <p>children [7] - 7:21, 15:16, 15:20, 29:11, 29:13, 30:25, 45:2</p> <p>Children [1] - 14:13</p> <p>choice [1] - 96:12</p> <p>Christopher [4] - 2:19, 6:3, 97:4, 97:19</p> <p>CHRISTOPHER [1] - 97:13</p> <p>churn [1] - 158:12</p> <p>CI [1] - 79:20</p> <p>circles [1] - 9:25</p> <p>Circuit [5] - 98:21, 176:16, 177:10, 179:24, 198:22</p> <p>circum [1] - 186:8</p> <p>circumscribe [1] - 202:15</p> <p>circumstances [2] - 95:2, 123:5</p> <p>circumvent [2] - 163:16, 197:8</p> <p>cite [3] - 176:25, 181:19, 200:21</p> <p>cited [4] - 98:20, 114:16, 178:22, 202:2</p> <p>citing [2] - 178:5, 200:11</p> <p>city [1] - 160:7</p> <p>civil [1] - 199:21</p> <p>Civil [1] - 97:22</p> <p>claim [1] - 23:9</p> <p>claiming [1] - 10:7</p> <p>clarify [5] - 52:13, 53:23, 65:10, 78:25, 91:10</p> <p>classic [1] - 138:22</p> <p>clear [19] - 18:14, 24:21, 46:6, 65:15, 70:14, 70:19, 73:20, 92:9, 94:18, 99:14, 103:2, 116:24, 176:13, 177:7, 179:11, 190:19, 194:21, 198:3, 198:6</p> <p>clearing [1] - 96:16</p> <p>clearly [2] - 183:19, 187:15</p> <p>clerk [3] - 7:4, 135:15, 135:16</p> <p>click [2] - 25:21, 87:7</p> <p>clicked [5] - 31:20, 31:24, 32:6, 45:25, 125:19</p>	<p>clicking [6] - 22:10, 26:8, 31:22, 32:9, 193:6, 202:23</p> <p>clicks [1] - 86:14</p> <p>client [8] - 132:3, 134:12, 136:18, 136:20, 141:16, 171:25, 196:6</p> <p>clients [2] - 157:20, 157:25</p> <p>clipped [1] - 31:14</p> <p>clock [1] - 108:18</p> <p>close [1] - 56:15</p> <p>closed [4] - 69:22, 140:3, 158:24, 159:24</p> <p>closed-door [1] - 159:24</p> <p>closest [1] - 178:5</p> <p>Closing [2] - 2:6, 2:7</p> <p>closing [1] - 197:17</p> <p>CLOSING [2] - 174:23, 183:15</p> <p>clothed [1] - 22:20</p> <p>clueless [1] - 146:19</p> <p>CNN.com [1] - 16:13</p> <p>code [46] - 51:15, 61:13, 61:14, 84:4, 85:5, 87:12, 87:21, 93:9, 93:14, 100:3, 105:21, 105:23, 106:3, 106:13, 107:22, 107:23, 109:8, 109:20, 110:19, 110:21, 112:5, 112:7, 114:23, 115:10, 125:3, 127:14, 128:14, 128:15, 128:18, 128:19, 129:9, 129:14, 129:15, 129:23, 130:11, 132:24, 141:4, 149:21, 150:5, 173:6, 173:7, 173:10, 173:12, 187:9, 189:4</p> <p>Code [2] - 39:13, 205:7</p> <p>collaboration [1] - 123:19</p> <p>collateral [1] - 126:3</p> <p>colleague [1] - 135:17</p> <p>colleagues [1] - 157:18</p> <p>collect [18] - 9:9, 47:4, 62:23, 62:24, 63:1, 63:14, 84:1, 84:20, 92:11, 109:25, 110:15, 111:14,</p>
--	--	--	--	---

<p>126:6, 129:14, 143:6, 145:2, 149:5, 196:2</p> <p>collected [45] - 40:6, 40:12, 41:5, 41:6, 42:14, 45:7, 45:9, 45:14, 45:16, 45:18, 45:23, 47:10, 47:12, 48:19, 62:9, 63:2, 63:12, 63:16, 75:19, 77:9, 83:19, 83:21, 83:24, 84:1, 89:6, 89:24, 91:25, 92:7, 93:3, 94:9, 94:10, 94:15, 112:8, 112:9, 114:21, 116:13, 127:1, 130:12, 139:25, 144:21, 146:1, 150:5, 161:24, 191:6, 191:23</p> <p>collecting [6] - 59:20, 62:11, 62:13, 110:4, 147:21, 191:9</p> <p>collection [2] - 79:2, 110:17</p> <p>collectively [2] - 83:15</p> <p>collects [19] - 46:25, 47:3, 61:5, 61:7, 92:13, 113:4, 127:3, 127:4, 127:5, 127:6, 128:14, 128:19, 129:6, 129:7, 129:8, 129:9, 129:15, 129:23, 149:22</p> <p>college [1] - 131:6</p> <p>colorful [1] - 134:1</p> <p>columns [1] - 142:7</p> <p>combative [1] - 72:10</p> <p>combination [1] - 131:25</p> <p>Comcast [1] - 42:22</p> <p>coming [6] - 16:15, 47:6, 67:7, 92:25, 180:6</p> <p>commands [3] - 84:15, 85:1, 85:2</p> <p>commented [1] - 75:8</p> <p>Commission [4] - 159:15, 160:4, 160:11, 172:9</p> <p>commit [1] - 38:19</p> <p>committee [3] - 99:7, 99:8, 115:5</p> <p>common [7] - 18:23, 24:19, 26:25, 43:17, 65:10, 106:18, 180:15</p> <p>commonly [1] - 131:3</p> <p>communicate [4] -</p>	<p>42:25, 79:5, 88:20, 149:1</p> <p>communicating [5] - 85:20, 85:23, 86:12, 87:3, 189:8</p> <p>communication [9] - 88:15, 131:14, 132:2, 132:9, 134:15, 142:5, 162:18, 180:6</p> <p>Communication [1] - 3:15</p> <p>communications [1] - 134:12</p> <p>Communications [1] - 141:8</p> <p>communities [3] - 73:7, 75:9, 75:14</p> <p>community [3] - 39:7, 116:19, 117:24</p> <p>companies [1] - 172:10</p> <p>company [3] - 102:4, 160:13, 160:24</p> <p>compel [3] - 4:22, 5:1, 49:17</p> <p>compensation [1] - 98:8</p> <p>complained [2] - 115:4, 160:24</p> <p>complete [1] - 87:9</p> <p>completed [1] - 175:12</p> <p>completely [6] - 69:20, 102:15, 162:11, 176:15, 191:24</p> <p>complex [2] - 135:6, 145:20</p> <p>complicated [2] - 106:12, 113:14</p> <p>complied [1] - 177:17</p> <p>comply [2] - 83:8, 181:14</p> <p>complying [1] - 171:18</p> <p>component [1] - 60:14</p> <p>components [1] - 11:23</p> <p>compress [1] - 23:15</p> <p>compression [1] - 23:12</p> <p>compromise [1] - 72:13</p> <p>compromised [2] - 105:21, 124:20</p> <p>compute [1] - 193:17</p> <p>computer [141] - 4:13, 9:8, 10:17, 11:2, 11:18, 15:17, 19:8,</p>	<p>26:4, 27:3, 39:7, 40:1, 41:13, 44:8, 44:15, 45:5, 46:21, 47:20, 60:7, 60:9, 60:12, 60:15, 60:21, 60:25, 61:15, 61:17, 61:18, 61:24, 62:13, 62:21, 63:4, 63:5, 63:6, 63:11, 63:22, 63:23, 64:2, 64:4, 64:11, 64:23, 84:6, 84:8, 84:11, 84:15, 84:18, 84:23, 84:25, 85:6, 85:20, 86:17, 87:12, 87:15, 92:1, 92:12, 92:14, 92:18, 94:5, 94:11, 95:25, 96:5, 98:11, 98:13, 105:6, 107:14, 109:13, 109:21, 109:23, 110:1, 110:6, 110:7, 110:18, 110:19, 110:22, 110:23, 111:13, 111:14, 111:20, 112:5, 112:7, 112:8, 112:19, 113:9, 114:5, 114:14, 114:23, 115:10, 116:1, 116:13, 116:19, 117:23, 120:7, 122:8, 127:4, 127:8, 128:1, 128:15, 128:20, 129:8, 129:16, 130:3, 130:12, 131:10, 135:23, 136:23, 138:5, 138:6, 138:23, 139:9, 140:14, 143:17, 148:4, 148:15, 149:5, 149:9, 164:9, 173:10, 174:4, 178:16, 179:23, 180:7, 182:15, 184:7, 184:8, 184:9, 185:2, 185:7, 185:13, 186:9, 191:18, 191:20, 193:20, 194:9, 194:13, 196:7, 196:19, 196:22, 197:5, 198:9</p> <p>computer's [4] - 96:1, 149:20, 150:2, 150:8</p> <p>computer-readable [1] - 173:10</p> <p>computer-related [1] - 11:2</p>	<p>computers [27] - 16:6, 43:1, 43:20, 60:1, 61:22, 64:5, 65:18, 71:11, 73:10, 86:11, 86:12, 87:3, 90:13, 105:22, 124:4, 138:4, 138:7, 143:18, 168:2, 169:12, 181:24, 184:14, 184:21, 186:2, 186:13, 189:7, 193:19</p> <p>conceal [2] - 10:3, 179:1</p> <p>concealed [3] - 9:21, 17:9, 17:15</p> <p>concede [2] - 176:7, 179:17</p> <p>concern [5] - 69:7, 73:20, 94:21, 94:23, 108:11</p> <p>concerned [2] - 17:20, 116:4</p> <p>concerns [1] - 67:25</p> <p>conclude [1] - 12:20</p> <p>conclusion [2] - 95:14, 185:11</p> <p>condition [3] - 64:7, 65:8, 66:2</p> <p>conditions [1] - 66:3</p> <p>conduct [4] - 10:2, 50:9, 181:11, 182:13</p> <p>confer [1] - 50:7</p> <p>conference [4] - 6:11, 7:8, 67:22, 70:3</p> <p>Conference [1] - 205:11</p> <p>confessed [1] - 152:10</p> <p>confession [1] - 137:15</p> <p>confessions [1] - 11:8</p> <p>confident [1] - 77:3</p> <p>confidential [2] - 79:7, 79:13</p> <p>confidentiality [2] - 143:14, 170:3</p> <p>configuration [1] - 103:16</p> <p>configure [1] - 103:10</p> <p>configured [7] - 16:25, 18:16, 19:18, 27:15, 53:19, 95:19, 103:8</p> <p>confirm [1] - 33:7</p> <p>conformance [1] - 205:10</p> <p>confronted [1] - 179:20</p> <p>confused [4] - 127:16,</p>	<p>129:17, 130:15, 167:18</p> <p>confusion [1] - 127:10</p> <p>connect [10] - 16:9, 16:12, 17:16, 42:19, 43:20, 44:10, 47:2, 91:13, 144:25, 165:1</p> <p>connected [5] - 4:23, 37:12, 43:3, 164:16, 164:23</p> <p>connecting [2] - 43:16, 62:1</p> <p>connection [19] - 43:11, 43:12, 43:14, 44:8, 91:18, 93:14, 103:12, 103:13, 127:8, 137:7, 137:8, 138:3, 166:15, 171:25, 172:3, 181:16, 182:1, 185:5, 189:5</p> <p>connections [2] - 19:1, 101:3</p> <p>conscious [1] - 82:24</p> <p>consider [1] - 186:7</p> <p>considered [2] - 39:4, 180:21</p> <p>consistent [1] - 180:3</p> <p>consistently [2] - 179:19, 179:21</p> <p>Constitution [1] - 158:1</p> <p>constitutional [2] - 76:21, 198:7</p> <p>constitutionality [1] - 144:9</p> <p>constitutionally [4] - 11:25, 13:9, 13:11, 195:24</p> <p>constraints [1] - 13:12</p> <p>construed [1] - 49:7</p> <p>consultant [3] - 99:25, 159:21, 161:1</p> <p>consulted [5] - 81:13, 81:16, 81:24, 82:6, 82:8</p> <p>contact [1] - 110:2</p> <p>contain [2] - 30:24, 40:9</p> <p>contained [11] - 12:2, 18:8, 24:3, 27:1, 30:10, 30:12, 32:4, 38:10, 41:4, 181:15, 190:8</p> <p>containing [3] - 4:13, 45:21, 188:19</p> <p>contains [9] - 21:12, 24:14, 26:11, 27:16, 28:8, 40:13, 40:14, 40:17, 94:12</p>
---	--	---	---	---

<p>contemplated [1] - 177:1</p> <p>contemplates [1] - 194:18</p> <p>contents [1] - 12:22</p> <p>content [2] - 30:23, 84:25</p> <p>contention [1] - 12:6</p> <p>contents [7] - 28:2, 32:15, 129:23, 131:24, 148:12, 173:17, 201:3</p> <p>context [2] - 39:11, 52:4</p> <p>continuation [1] - 29:3</p> <p>continue [2] - 41:3, 58:25</p> <p>continued [2] - 8:9, 101:19</p> <p>continuing [1] - 118:23</p> <p>contract [5] - 159:17, 159:20, 159:22, 160:22, 160:25</p> <p>contractor [1] - 108:3</p> <p>contrary [1] - 183:10</p> <p>contribute [1] - 35:21</p> <p>contributed [2] - 55:23, 55:24</p> <p>control [10] - 8:4, 9:6, 37:14, 40:23, 42:10, 58:7, 61:16, 65:1, 95:10, 166:6</p> <p>controlled [3] - 45:10, 184:9, 188:9</p> <p>controlling [1] - 178:3</p> <p>controls [1] - 151:18</p> <p>controversial [1] - 115:3</p> <p>conversation [3] - 6:23, 83:11, 83:13</p> <p>convey [1] - 56:7</p> <p>conveyed [1] - 79:16</p> <p>conveying [2] - 195:5, 196:10</p> <p>Coordination [1] - 14:13</p> <p>coordination [1] - 15:6</p> <p>copy [21] - 8:3, 33:10, 36:13, 51:14, 57:19, 58:6, 58:10, 61:12, 111:2, 122:6, 123:10, 124:21, 131:8, 133:11, 143:9, 152:18, 172:24, 173:21, 200:20</p> <p>core [2] - 12:3, 29:16</p>	<p>corner [2] - 22:16, 150:14</p> <p>correct [57] - 8:22, 21:25, 24:24, 24:25, 28:24, 32:25, 34:6, 41:15, 42:8, 45:6, 51:15, 53:9, 53:10, 53:12, 54:8, 55:10, 55:14, 55:21, 56:4, 56:6, 57:7, 58:2, 58:25, 59:6, 59:9, 59:24, 59:25, 60:4, 60:8, 60:11, 61:20, 62:11, 65:5, 74:16, 78:1, 78:16, 80:24, 85:16, 85:21, 90:10, 90:19, 91:7, 92:22, 108:20, 146:21, 154:1, 154:3, 156:7, 157:3, 158:7, 162:18, 162:23, 173:17, 187:19, 191:12, 202:13, 205:7</p> <p>correcting [1] - 118:22</p> <p>correctly [4] - 77:4, 85:15, 103:9, 107:1</p> <p>corresponded [1] - 74:14</p> <p>counsel [2] - 5:10, 56:14</p> <p>counsel's [2] - 160:5, 160:10</p> <p>Count [1] - 4:12</p> <p>counterparts [1] - 76:9</p> <p>countries [9] - 73:14, 73:15, 73:18, 75:21, 75:23, 76:1, 76:11, 103:6, 163:18</p> <p>country [7] - 16:19, 48:1, 73:9, 177:23, 180:4, 188:18</p> <p>counts [1] - 4:9</p> <p>Counts [1] - 4:10</p> <p>County [4] - 47:18, 47:21, 48:21, 146:16</p> <p>couple [5] - 4:16, 6:13, 68:3, 106:6, 123:18</p> <p>course [9] - 8:1, 39:17, 42:1, 51:13, 69:4, 71:15, 72:14, 83:4, 170:23</p> <p>COURT [139] - 1:1, 4:1, 5:19, 5:22, 5:24, 6:5, 13:18, 13:21, 14:1, 22:4, 25:10, 27:8, 31:17, 39:21, 49:15, 50:4, 50:8,</p>	<p>50:15, 52:19, 56:19, 56:23, 64:24, 66:1, 66:19, 66:21, 67:11, 67:13, 67:18, 67:21, 68:20, 69:2, 69:8, 69:15, 69:18, 71:6, 71:24, 72:16, 74:5, 74:11, 74:18, 76:3, 76:12, 77:17, 79:12, 79:25, 80:9, 80:12, 80:17, 80:19, 90:23, 91:1, 91:3, 91:15, 93:8, 93:16, 93:20, 93:24, 94:1, 96:18, 96:21, 96:23, 96:25, 97:2, 97:6, 97:9, 102:16, 111:22, 112:3, 119:5, 119:21, 124:24, 125:12, 126:15, 127:18, 129:2, 130:19, 132:22, 133:1, 133:3, 133:10, 137:21, 140:20, 140:25, 141:17, 141:20, 142:8, 142:13, 142:19, 142:22, 143:20, 145:14, 147:9, 147:22, 149:18, 149:24, 150:1, 150:7, 150:24, 151:8, 151:22, 152:2, 153:17, 154:8, 154:24, 155:6, 160:2, 168:5, 168:8, 169:17, 174:7, 174:9, 174:12, 174:14, 174:21, 182:14, 183:11, 183:13, 183:25, 184:4, 185:10, 185:17, 186:23, 187:3, 187:20, 188:15, 189:17, 190:4, 190:11, 190:21, 191:10, 192:1, 192:17, 192:25, 193:24, 194:6, 194:11, 198:10, 198:18, 203:15</p> <p>Court [73] - 1:24, 2:10, 4:7, 5:5, 5:7, 6:16, 7:12, 7:22, 8:24, 9:17, 9:24, 10:16, 11:10, 11:23, 12:20, 37:4, 37:19, 41:7, 42:14, 68:5, 71:14, 73:21, 76:16, 76:22,</p>	<p>77:17, 77:23, 77:24, 77:25, 78:2, 102:16, 114:25, 118:13, 118:19, 120:3, 133:8, 133:11, 135:7, 135:10, 137:22, 167:19, 168:10, 175:20, 176:22, 177:5, 178:15, 178:19, 178:20, 184:6, 186:7, 186:11, 186:17, 187:25, 192:9, 194:20, 194:23, 195:6, 195:11, 195:13, 195:19, 195:22, 199:1, 200:19, 201:11, 201:17, 201:22, 202:4, 203:13, 203:17, 203:23, 203:25, 205:3, 205:4, 205:17</p> <p>court [18] - 4:25, 5:2, 6:13, 39:15, 81:20, 82:15, 82:20, 82:21, 83:1, 83:6, 83:12, 98:23, 99:1, 135:12, 178:9, 182:19, 182:25, 200:2</p> <p>Court's [11] - 4:1, 7:1, 7:4, 7:8, 13:3, 13:5, 71:16, 71:22, 74:4, 181:18, 195:17</p> <p>Court..... [2] - 2:15, 2:16</p> <p>courthouse [1] - 135:19</p> <p>courtroom [9] - 6:6, 7:10, 16:16, 26:1, 43:11, 68:3, 68:21, 109:11, 133:21</p> <p>Courts [4] - 115:20, 126:13, 166:25, 202:8</p> <p>courts [7] - 98:21, 98:22, 161:20, 176:5, 177:22, 179:17, 182:4</p> <p>cover [2] - 121:22, 175:7</p> <p>covering [1] - 98:7</p> <p>covert [1] - 101:23</p> <p>Cox [6] - 42:22, 141:7, 142:18, 142:19, 147:13, 150:10</p> <p>craft [7] - 23:2, 24:19, 26:13, 26:25, 34:17, 51:9, 65:10</p> <p>crafting [1] - 158:12</p>	<p>crash [2] - 108:13, 108:19</p> <p>crashes [2] - 108:7, 108:8</p> <p>crawling [1] - 180:16</p> <p>create [1] - 159:3</p> <p>created [11] - 7:18, 20:23, 25:16, 26:10, 54:10, 101:14, 101:22, 102:3, 102:4, 159:4, 159:10</p> <p>creating [1] - 159:1</p> <p>creator [2] - 20:24, 26:10</p> <p>credentials [1] - 159:23</p> <p>credibility [2] - 160:3, 178:20</p> <p>credit [1] - 23:9</p> <p>crime [2] - 160:21, 175:10</p> <p>Crimes [1] - 14:13</p> <p>crimes [8] - 15:2, 15:3, 15:10, 15:16, 15:19, 38:19, 166:10</p> <p>criminal [10] - 10:2, 14:25, 15:2, 39:12, 39:17, 43:5, 99:8, 175:17, 178:18, 181:16</p> <p>Criminal [3] - 12:4, 14:12, 99:7</p> <p>criminals [5] - 106:22, 107:7, 118:1, 124:3, 169:5</p> <p>criticism [1] - 150:24</p> <p>criticize [1] - 167:1</p> <p>cross [10] - 22:22, 23:5, 50:9, 51:19, 51:24, 51:25, 52:1, 52:3, 52:14, 52:25</p> <p>Cross [3] - 2:14, 2:15, 2:21</p> <p>CROSS [3] - 50:17, 91:4, 152:4</p> <p>cross-board [6] - 22:22, 23:5, 51:19, 51:25, 52:14, 52:25</p> <p>Cross-Examination [3] - 2:14, 2:15, 2:21</p> <p>cross-examination [1] - 50:9</p> <p>CROSS-EXAMINATION [3] - 50:17, 91:4, 152:4</p> <p>cross-post [3] - 51:24, 52:1, 52:3</p> <p>crosses [1] - 193:3</p> <p>crowd [1] - 102:2</p> <p>CRR [2] - 1:23, 205:17</p>
--	--	--	--	--

<p>cSoghoian [2] - 156:22, 156:23</p> <p>cSSoghoian [1] - 156:21</p> <p>cubbyholes [1] - 84:11</p> <p>culpable [2] - 11:8, 11:19</p> <p>cure [1] - 171:5</p> <p>curious [1] - 137:22</p> <p>current [2] - 14:21, 32:2</p> <p>custody [3] - 145:7, 145:8, 161:24</p> <p>custom [1] - 107:14</p> <p>customer [3] - 74:16, 160:14, 187:8</p> <p>customer's [1] - 139:3</p> <p>customers' [1] - 172:11</p> <p>cut [4] - 52:18, 131:21, 131:23, 161:11</p> <p>cyber [1] - 98:18</p>	<p>141:11, 143:5, 143:9, 143:11, 143:15, 143:16, 149:16, 149:22, 151:17, 151:20, 152:14, 152:21, 160:14, 161:24, 162:19, 170:3, 170:4, 170:8, 170:9, 170:16, 170:25, 171:2, 172:1, 172:4, 172:11</p> <p>database [1] - 83:25</p> <p>databases [1] - 47:24</p> <p>date [17] - 35:24, 36:3, 36:5, 40:14, 41:10, 43:4, 43:9, 47:11, 89:21, 89:23, 90:9, 118:7, 120:12, 120:18, 121:3, 121:4, 122:13</p> <p>Dated [1] - 205:12</p> <p>dated [1] - 20:23</p> <p>dates [4] - 8:13, 108:14, 162:6</p> <p>days [7] - 37:6, 40:24, 42:10, 88:10, 124:8, 168:14, 168:16</p> <p>dealing [4] - 64:18, 64:19, 77:14, 182:4</p> <p>dean [2] - 40:4, 168:12</p> <p>Dean [17] - 4:5, 5:11, 13:14, 22:5, 25:11, 27:9, 31:18, 49:15, 80:13, 96:18, 96:25, 152:2, 153:23, 155:6, 155:9, 174:21, 183:11</p> <p>DEAN [63] - 1:13, 5:14, 13:16, 13:23, 14:5, 22:1, 25:7, 27:5, 31:13, 49:14, 50:3, 50:6, 50:13, 51:3, 52:10, 52:17, 56:13, 64:17, 65:23, 67:10, 67:12, 67:15, 67:20, 67:23, 69:5, 69:16, 70:2, 71:19, 80:14, 90:25, 91:11, 93:6, 93:22, 93:25, 94:3, 96:17, 96:22, 97:1, 102:12, 111:16, 118:11, 119:1, 128:25, 132:19, 133:17, 133:20, 137:13, 138:1, 152:3, 152:5, 153:16, 154:9, 155:8, 160:1, 168:7, 168:11, 169:16,</p>	<p>173:11, 174:8, 174:22, 174:24, 183:2, 183:12</p> <p>Dean..... [1] - 2:16</p> <p>Dean..... [1] - 2:14</p> <p>Dean..... [1] - 2:21</p> <p>death [1] - 157:18</p> <p>debated [1] - 83:11</p> <p>December [6] - 4:9, 20:23, 32:17, 33:4, 53:7, 108:15</p> <p>decent [1] - 122:15</p> <p>decided [1] - 199:8</p> <p>deciding [1] - 24:16</p> <p>decision [8] - 82:25, 157:1, 157:2, 176:12, 176:16, 176:22, 181:18, 182:6</p> <p>decisions [1] - 157:6</p> <p>declarations [1] - 104:21</p> <p>declined [3] - 98:4, 116:4, 185:6</p> <p>dedicated [9] - 20:7, 21:16, 28:6, 28:10, 35:16, 64:13, 157:11, 174:25, 202:25</p> <p>deem [1] - 39:14</p> <p>default [1] - 170:19</p> <p>defect [1] - 119:15</p> <p>defend [1] - 115:7</p> <p>defendant [24] - 1:7, 47:17, 74:3, 88:13, 95:22, 110:22, 116:1, 130:6, 137:6, 139:18, 140:12, 148:17, 164:12, 177:21, 178:5, 178:22, 179:15, 188:10, 189:24, 195:8, 196:24, 198:1, 201:9</p> <p>Defendant [1] - 2:5</p> <p>DEFENDANT [3] - 1:17, 2:18, 183:15</p> <p>defendant's [30] - 48:20, 63:11, 63:22, 64:2, 64:4, 85:5, 90:21, 92:1, 110:6, 110:7, 110:19, 110:21, 110:23, 111:14, 120:7, 130:2, 136:23, 137:23, 138:23, 139:9, 140:14, 140:15, 143:17, 148:22, 149:4,</p>	<p>149:9, 150:15, 164:9, 178:14, 196:9</p> <p>Defendant's [6] - 111:1, 127:21, 130:22, 140:10, 141:23, 167:25</p> <p>DEFENDANT'S [1] - 3:10</p> <p>Defendant..... [1] - 2:7</p> <p>defendants [2] - 157:18, 186:20</p> <p>Defender's [1] - 1:18</p> <p>defender's [1] - 156:12</p> <p>defense [27] - 4:16, 11:10, 11:22, 56:14, 63:12, 73:5, 78:14, 78:20, 83:22, 85:3, 94:11, 97:4, 101:18, 108:2, 124:25, 128:22, 131:2, 155:5, 157:19, 157:24, 161:21, 164:8, 173:3, 174:2, 175:18, 175:23, 180:18</p> <p>Defense [2] - 129:2, 132:18</p> <p>defined [2] - 109:17, 156:14</p> <p>definitely [1] - 153:10</p> <p>definition [2] - 198:21, 203:9</p> <p>degree [3] - 98:11, 98:12, 98:14</p> <p>delegated [1] - 12:5</p> <p>deliberate [3] - 177:14, 178:2, 181:10</p> <p>deliver [8] - 109:5, 113:23, 115:25, 117:14, 162:15, 162:16, 170:22, 170:23</p> <p>delivered [5] - 109:21, 109:24, 112:6, 125:6, 169:2</p> <p>delivers [2] - 104:15, 170:2</p> <p>delivery [2] - 113:21, 168:2</p> <p>demonstrate [2] - 79:1, 144:19</p> <p>demonstrated [2] - 158:15, 158:21</p> <p>denied [3] - 119:4, 197:23, 200:8</p> <p>DENIS [1] - 1:13</p> <p>Denis [2] - 4:5, 143:22</p>	<p>Denis.Dean@usdoj.gov [1] - 1:15</p> <p>deny [2] - 145:13, 186:11</p> <p>denying [1] - 167:21</p> <p>department [2] - 101:18</p> <p>Department [1] - 99:11</p> <p>depict [2] - 29:13, 35:24</p> <p>depicted [1] - 22:18</p> <p>depicting [1] - 27:24</p> <p>depicts [2] - 24:16, 30:21</p> <p>deploy [15] - 46:6, 59:7, 59:16, 62:2, 62:4, 71:12, 80:23, 85:9, 85:12, 87:8, 119:17, 119:18, 144:1, 146:11, 202:19</p> <p>deployed [20] - 37:9, 38:3, 38:21, 39:25, 45:4, 46:4, 47:19, 47:20, 51:17, 61:19, 67:8, 85:10, 86:2, 86:8, 88:9, 95:20, 119:2, 150:1, 150:25, 187:22</p> <p>deployment [6] - 45:25, 65:3, 82:2, 82:9, 94:13, 146:1</p> <p>deploys [1] - 59:24</p> <p>derived [1] - 4:18</p> <p>describe [8] - 25:12, 32:3, 35:22, 37:19, 100:8, 111:11, 126:25, 127:11</p> <p>described [27] - 17:7, 24:9, 32:8, 34:17, 34:18, 37:2, 37:4, 37:12, 37:21, 40:7, 41:7, 41:8, 41:21, 45:15, 46:1, 46:23, 63:7, 84:9, 86:2, 100:25, 106:1, 114:20, 127:5, 138:11, 164:6, 165:20, 165:21</p> <p>describing [8] - 104:22, 111:2, 111:6, 113:18, 126:23, 166:15, 167:14, 170:12</p> <p>description [6] - 84:15, 100:9, 113:5, 114:7, 166:20, 203:6</p> <p>DESCRIPTION [2] - 3:4, 3:11</p>
<p>D</p>				
<p>D.C [3] - 159:11, 160:7, 160:20</p> <p>Dan [1] - 13:17</p> <p>Dana [3] - 1:23, 205:3, 205:17</p> <p>dangerous [1] - 115:13</p> <p>DANIEL [1] - 14:2</p> <p>daniel [1] - 2:13</p> <p>Daniel [2] - 5:15, 14:7</p> <p>dark [3] - 118:19, 118:24, 122:2</p> <p>Darknet [1] - 9:15</p> <p>data [78] - 40:10, 40:11, 41:4, 41:5, 41:6, 45:7, 58:20, 63:9, 63:10, 63:14, 63:18, 63:19, 72:5, 79:2, 87:13, 94:8, 94:12, 94:20, 94:23, 95:2, 95:5, 96:4, 96:10, 96:11, 96:14, 100:4, 128:9, 128:11, 130:16, 131:9, 131:12, 131:20, 132:12, 134:23, 134:24, 135:2, 136:3, 136:4, 136:6, 136:20, 136:23, 136:25, 137:2, 138:23, 139:3, 139:8, 139:25, 140:8, 140:9, 141:9,</p>				

<p>83:6, 85:24, 121:20, 167:12, 183:20, 184:14, 185:4, 185:9, 185:24, 186:4, 186:9, 186:19, 189:18, 192:12</p> <p>easy [1] - 51:3</p> <p>eat [1] - 118:3</p> <p>eaten [1] - 171:24</p> <p>edit [1] - 103:16</p> <p>educated [1] - 8:23</p> <p>educating [2] - 161:20</p> <p>education [2] - 6:14, 98:9</p> <p>effective [2] - 10:7, 122:15</p> <p>effort [2] - 55:5, 114:13</p> <p>efforts [3] - 7:24, 181:14, 203:23</p> <p>eight [1] - 177:22</p> <p>Eighth [3] - 177:10, 179:24, 198:22</p> <p>either [13] - 11:24, 13:11, 22:19, 49:20, 71:16, 81:11, 104:25, 113:6, 114:3, 155:1, 156:11, 165:3, 166:11</p> <p>elect [1] - 82:18</p> <p>elected [1] - 6:17</p> <p>electronic [1] - 194:24</p> <p>elicit [1] - 49:20</p> <p>ELMO [1] - 13:25</p> <p>elsewhere [3] - 121:22, 186:4, 197:13</p> <p>emanating [1] - 195:21</p> <p>employ [2] - 108:25, 171:20</p> <p>employed [9] - 14:9, 38:16, 97:21, 97:22, 101:15, 108:3, 118:7, 152:19, 159:14</p> <p>employee [3] - 135:8, 155:12, 160:4</p> <p>employee's [1] - 135:8</p> <p>employees [3] - 102:5, 104:14, 161:16</p> <p>employs [1] - 152:16</p> <p>enable [2] - 27:3, 191:16</p> <p>encounter [2] - 161:4, 161:8</p> <p>encountered [2] - 33:23, 34:13</p>	<p>encounters [2] - 158:8, 161:9</p> <p>encourage [2] - 155:18, 155:21</p> <p>encouraged [1] - 24:10</p> <p>encrypt [8] - 22:23, 23:22, 23:25, 91:9, 143:4, 149:17, 172:10, 172:11</p> <p>encrypted [21] - 23:18, 23:19, 24:9, 91:18, 92:2, 92:5, 92:8, 94:6, 94:8, 96:12, 143:11, 145:3, 152:21, 154:20, 169:24, 170:8, 171:10, 171:14, 171:15, 171:16, 171:25</p> <p>Encryption [1] - 154:5</p> <p>encryption [26] - 23:19, 94:21, 95:1, 143:13, 149:7, 152:19, 152:22, 153:3, 153:6, 154:11, 154:17, 169:22, 170:2, 170:7, 170:8, 170:9, 170:13, 170:15, 170:20, 170:22, 170:24, 171:1, 171:20, 171:22, 172:8</p> <p>end [11] - 6:20, 7:9, 70:3, 105:17, 126:25, 129:11, 141:21, 142:12, 169:14, 171:13, 171:17</p> <p>ended [2] - 115:6, 159:13</p> <p>enforcement [26] - 8:2, 8:15, 9:11, 11:1, 12:13, 21:6, 39:14, 39:23, 53:8, 72:23, 74:20, 76:1, 79:21, 83:15, 83:17, 165:15, 166:8, 175:9, 177:17, 178:6, 180:22, 181:14, 182:19, 184:5, 185:21, 187:12</p> <p>engage [6] - 7:19, 10:1, 10:4, 147:4, 161:17, 161:19</p> <p>engaged [2] - 27:25, 45:3</p> <p>engine [5] - 19:24,</p>	<p>70:8, 70:9, 70:15, 71:1</p> <p>engineer [1] - 106:11</p> <p>engineers [3] - 107:24, 108:2, 108:23</p> <p>engines [3] - 19:20, 70:18, 203:5</p> <p>English [4] - 31:8, 128:2, 135:6</p> <p>enter [6] - 25:15, 26:17, 26:20, 26:22, 26:23, 189:3</p> <p>entered [2] - 85:14, 85:15</p> <p>entering [1] - 202:23</p> <p>entire [5] - 24:17, 25:4, 83:25, 86:21, 121:6</p> <p>entirely [2] - 20:6, 91:22</p> <p>entirety [2] - 28:9, 83:20</p> <p>entitled [2] - 30:2, 205:9</p> <p>entity [3] - 95:15, 96:7, 101:13</p> <p>entry [2] - 114:7, 189:18</p> <p>enumerated [1] - 112:9</p> <p>envelope [12] - 129:24, 130:8, 131:24, 140:2, 140:24, 148:6, 148:9, 148:10, 148:12, 149:13, 150:14</p> <p>envelopes [1] - 131:23</p> <p>envision [1] - 187:21</p> <p>equivalent [1] - 193:22</p> <p>Erika [1] - 7:4</p> <p>errant [1] - 80:2</p> <p>erroneously [1] - 176:12</p> <p>error [7] - 77:5, 77:14, 79:2, 79:5, 79:20, 79:21, 107:23</p> <p>essence [2] - 107:5, 144:25</p> <p>essentially [14] - 44:16, 84:16, 101:2, 103:11, 103:14, 107:12, 118:2, 130:7, 131:7, 131:25, 134:11, 138:12, 141:13, 156:6</p> <p>established [2] -</p>	<p>25:18, 44:23</p> <p>Esterbrook [1] - 7:4</p> <p>estimate [3] - 64:8, 65:21, 67:2</p> <p>estimated [1] - 64:12</p> <p>estimating [1] - 65:5</p> <p>estimation [2] - 65:19, 66:17</p> <p>et [1] - 29:25</p> <p>ethical [1] - 39:23</p> <p>European [1] - 99:4</p> <p>evaluate [1] - 115:21</p> <p>evaluating [1] - 99:10</p> <p>evasive [1] - 153:16</p> <p>evening [2] - 34:10, 80:25</p> <p>event [2] - 8:23, 38:12</p> <p>events [3] - 11:6, 99:20, 99:22</p> <p>eventually [4] - 90:20, 104:5, 121:13, 147:14</p> <p>evidence [22] - 4:18, 11:4, 11:11, 11:18, 12:19, 49:8, 75:25, 79:23, 94:10, 143:7, 149:6, 151:6, 164:4, 164:6, 172:4, 177:14, 179:12, 181:9, 197:5, 202:5, 202:6, 203:14</p> <p>evident [4] - 150:21, 152:15, 170:5</p> <p>evolution [1] - 195:10</p> <p>ex [2] - 168:24, 186:17</p> <p>ex-government [1] - 168:24</p> <p>exact [10] - 36:3, 63:19, 66:9, 66:12, 94:10, 143:9, 159:8, 189:10, 200:12, 201:10</p> <p>exactly [12] - 10:14, 34:22, 40:25, 42:16, 124:21, 134:24, 136:17, 146:16, 178:1, 197:20, 199:18, 200:14</p> <p>exam [1] - 114:15</p> <p>Examination [9] - 2:14, 2:14, 2:15, 2:15, 2:16, 2:16, 2:20, 2:21, 2:21</p> <p>EXAMINATION [9] - 14:4, 50:17, 80:18, 91:4, 93:7, 94:2, 97:15, 152:4, 169:19</p> <p>examination [2] - 50:9, 70:10</p> <p>example [5] - 17:15,</p>	<p>27:21, 31:22, 46:10, 82:20</p> <p>exceed [1] - 182:11</p> <p>except [1] - 9:19</p> <p>exception [5] - 39:22, 186:18, 201:18, 201:23, 202:5</p> <p>exchange [1] - 119:25</p> <p>excited [1] - 157:2</p> <p>exclusionary [1] - 181:19</p> <p>excuse [4] - 40:13, 40:22, 128:24, 193:17</p> <p>execute [4] - 62:20, 85:1, 119:10, 199:24</p> <p>executed [6] - 48:24, 49:4, 54:20, 77:21, 80:21, 130:14</p> <p>execution [6] - 4:19, 33:17, 49:2, 54:9, 55:22, 80:25</p> <p>executive [1] - 160:12</p> <p>exercised [2] - 145:21, 199:3</p> <p>EXHIBIT [1] - 3:1</p> <p>Exhibit [25] - 20:18, 22:7, 26:4, 27:6, 28:15, 31:15, 31:17, 34:8, 51:2, 55:9, 111:1, 127:21, 129:2, 130:22, 130:23, 130:24, 131:17, 131:20, 131:25, 132:7, 132:10, 140:11, 141:23, 167:25</p> <p>exhibit [8] - 13:24, 22:2, 28:17, 31:14, 85:4, 128:22, 131:16, 133:25</p> <p>Exhibits [2] - 132:18, 133:3</p> <p>exhibits [5] - 5:6, 13:25, 103:23, 132:11, 133:11</p> <p>exist [5] - 19:15, 20:6, 54:3, 106:8, 106:20</p> <p>existed [3] - 20:13, 199:15, 202:1</p> <p>existence [4] - 18:20, 63:24, 103:5, 175:6</p> <p>existing [4] - 22:14, 25:19, 25:20, 120:21</p> <p>exists [1] - 52:5</p> <p>expanded [1] - 99:12</p> <p>expect [4] - 103:4, 129:5, 171:17, 182:2</p> <p>expectation [10] - 179:19, 179:21,</p>
--	--	--	---	--

180:1, 180:9, 193:25, 194:7, 194:8, 194:24, 196:20, 197:4 expected [1] - 30:11 expenses [1] - 98:6 experience [18] - 21:5, 23:1, 24:19, 26:12, 29:6, 29:13, 51:8, 66:25, 83:1, 96:13, 98:10, 99:19, 100:19, 104:1, 105:2, 106:17, 113:18, 120:6 expert [9] - 73:5, 98:4, 98:8, 99:3, 111:19, 152:11, 160:3, 173:9, 174:2 experts [4] - 107:11, 109:7, 109:12, 109:14 explain [12] - 52:2, 98:9, 105:4, 111:24, 120:3, 130:22, 131:16, 133:7, 147:18, 158:17, 158:20, 170:1 explained [1] - 54:14 explaining [1] - 118:24 explanatory [1] - 175:13 explicitly [2] - 183:22, 201:17 exploit [60] - 60:20, 60:23, 60:24, 61:2, 61:13, 61:15, 61:21, 61:23, 61:25, 62:3, 62:4, 62:6, 62:7, 107:11, 107:22, 109:5, 109:22, 110:9, 110:12, 110:13, 113:23, 113:25, 115:12, 116:25, 119:7, 119:10, 119:11, 120:4, 120:13, 121:14, 121:16, 122:7, 122:24, 122:25, 123:4, 123:6, 123:10, 123:12, 124:9, 124:10, 124:13, 124:16, 124:17, 125:7, 125:11, 165:10, 165:13, 165:21, 165:23, 166:21, 166:22, 172:16, 172:21, 172:23, 172:24,	173:4, 173:21, 173:25, 174:5 exploitation [5] - 15:10, 21:16, 75:9, 75:14, 182:11 exploited [3] - 107:6, 107:11, 122:11 exploits [4] - 120:15, 121:7, 123:25, 124:4 expression [1] - 102:3 extension [1] - 136:14 extensions [2] - 135:19, 144:7 extent [2] - 49:19, 52:20 extract [1] - 128:6 extracted [1] - 128:8 extraordinarily [1] - 145:20 extreme [1] - 76:25 extremely [4] - 106:11, 115:3, 116:22, 152:7	193:23 fair [4] - 48:18, 62:12, 88:7, 162:3 fairly [3] - 12:15, 23:19, 106:18 faith [9] - 180:20, 180:21, 181:6, 182:3, 200:3, 200:5, 201:18, 201:23, 202:4 fake [6] - 138:19, 139:1, 139:20, 158:13, 159:2, 159:3 fall [1] - 99:9 falls [2] - 124:13, 192:15 false [3] - 151:2, 151:3, 151:4 familiar [8] - 28:2, 37:8, 42:15, 51:21, 51:23, 117:3, 117:9, 183:1 familiarity [1] - 82:21 fan [2] - 161:12, 161:13 far [6] - 17:20, 38:2, 117:5, 126:17, 137:20, 178:11 fashion [2] - 8:24, 9:8 fast [3] - 50:20, 121:25 fast-forward [1] - 121:25 faster [1] - 54:12 favor [1] - 118:14 FAYETTEVILLE [2] - 1:2, 1:10 Fayetteville [2] - 1:20, 1:25 FBI [99] - 5:15, 8:7, 10:12, 10:19, 10:20, 14:11, 14:17, 14:20, 15:14, 15:19, 33:4, 36:13, 36:14, 36:19, 36:22, 37:1, 37:5, 37:17, 37:21, 37:24, 38:20, 39:8, 40:8, 40:23, 41:11, 42:6, 42:10, 45:10, 45:21, 47:22, 57:16, 58:3, 58:7, 59:2, 59:4, 63:18, 64:25, 72:2, 72:5, 72:8, 80:22, 81:15, 82:18, 83:15, 86:9, 86:19, 88:1, 91:9, 95:9, 95:10, 95:11, 95:15, 96:5, 104:4, 108:3, 115:2, 115:6, 116:15, 116:16, 116:22, 118:7, 124:7, 125:2,	131:1, 132:3, 136:5, 142:15, 143:19, 146:10, 150:8, 151:2, 152:18, 158:9, 158:10, 158:22, 158:25, 161:2, 161:4, 161:8, 161:12, 161:14, 161:22, 164:15, 164:22, 168:13, 168:19, 171:15, 177:18, 178:1, 179:7, 179:9, 179:12, 179:13, 189:11, 197:19, 197:22, 200:25 FBI's [2] - 8:4, 95:18 FBI-controlled [1] - 45:10 feature [1] - 88:4 featured [1] - 35:25 February [12] - 25:2, 33:16, 34:11, 34:14, 35:6, 36:4, 36:5, 40:18, 58:3, 80:25, 81:2, 104:23 feces [1] - 30:17 fed [1] - 107:19 Federal [13] - 1:18, 1:24, 12:4, 14:10, 14:15, 99:6, 99:21, 159:15, 160:4, 160:10, 172:9, 205:3, 205:17 federal [11] - 4:12, 4:14, 8:11, 38:19, 39:11, 98:21, 99:1, 101:20, 156:11, 180:24, 185:21 fee [1] - 98:5 feed [1] - 109:7 female [4] - 34:20, 36:1, 45:2, 203:7 females [4] - 22:18, 27:25, 34:18, 36:1 fence [2] - 187:7, 187:9 Fetish [1] - 30:15 fetishes [1] - 30:4 few [11] - 91:2, 91:13, 112:15, 117:3, 126:10, 143:13, 159:13, 159:21, 161:1, 161:6, 169:18 fi [9] - 44:7, 90:13, 113:7, 138:10, 138:20, 138:25, 139:1, 139:18 fictional [1] - 31:11 field [2] - 45:21,	149:13 fields [1] - 134:9 fifteen [1] - 174:18 figure [2] - 47:25, 104:17 file [19] - 23:18, 24:2, 24:4, 24:14, 93:9, 128:5, 128:7, 129:4, 132:4, 132:6, 134:22, 135:24, 139:16, 142:5, 148:22, 149:2, 190:5, 192:19, 193:6 filed [4] - 4:16, 4:25, 5:1, 73:3 filenames [3] - 22:23, 23:22, 24:1 files [6] - 23:16, 84:8, 84:22, 84:23, 125:3 filing [1] - 75:10 fill [2] - 73:2, 187:11 filter [1] - 163:18 filtered [1] - 163:24 filtering [1] - 163:16 final [1] - 31:9 fine [7] - 7:6, 49:25, 71:22, 108:16, 108:17, 133:16, 141:19 fired [1] - 159:16 Firefox [7] - 100:13, 107:24, 115:15, 115:17, 123:13, 123:14, 123:16 firm [1] - 13:9 First [1] - 68:14 first [43] - 4:17, 11:12, 12:12, 14:3, 16:8, 18:22, 19:3, 22:12, 24:22, 28:18, 38:4, 48:5, 53:3, 88:12, 88:21, 89:2, 94:7, 95:8, 97:14, 98:25, 104:7, 105:18, 105:21, 105:25, 109:18, 110:8, 114:8, 114:9, 117:14, 118:8, 119:9, 127:24, 134:2, 136:1, 137:3, 140:16, 142:4, 156:10, 169:22, 183:18, 194:4, 197:14, 202:2 fit [2] - 30:4, 192:8 five [10] - 4:9, 6:23, 15:13, 28:19, 42:2, 43:12, 70:1, 151:16, 158:13, 159:2 Five [1] - 4:12
F				
	face [3] - 162:2, 200:2, 201:4 Facebook [3] - 163:20, 163:21, 163:23 facial [1] - 144:9 facilitate [1] - 15:8 facility [4] - 36:14, 36:25, 123:20, 151:18 fact [34] - 7:5, 7:11, 18:11, 19:22, 30:24, 33:8, 35:2, 35:7, 39:21, 53:18, 56:16, 64:3, 73:15, 79:9, 83:8, 83:24, 125:14, 129:18, 135:1, 147:12, 148:14, 149:19, 152:16, 159:22, 163:20, 166:21, 168:20, 170:15, 175:24, 178:12, 178:13, 187:16, 193:2, 198:15 fact-specific [2] - 178:12, 178:13 factory [1] - 113:6 facts [4] - 76:16, 115:22, 156:17, 183:1 factually [1] - 81:14 failed [1] - 49:16 fails [2] - 179:8,			

five-minute [1] - 6:23
fix [2] - 120:21, 159:12
fixed [1] - 116:20
flaw [5] - 107:13, 115:12, 116:20, 122:9, 159:13
flawed [1] - 169:23
flaws [7] - 106:7, 107:5, 107:6, 107:8, 108:22, 109:1, 109:2
flow [1] - 159:10
flexibility [1] - 175:22
flexibly [1] - 175:21
flies [1] - 200:2
flight [1] - 98:7
Florida [9] - 33:15, 33:20, 54:7, 55:17, 55:20, 55:24, 56:2, 56:3, 80:25
flow [2] - 90:4, 90:8
flowed [1] - 11:12
fly [1] - 158:22
focus [2] - 17:25, 76:15
focused [1] - 98:15
follow [1] - 104:19
followed [6] - 177:13, 198:5, 198:23, 199:2, 199:13
following [2] - 184:6, 185:23
follows [2] - 14:3, 97:14
followup [2] - 80:14, 153:20
food [1] - 98:7
foolish [1] - 162:11
foothold [1] - 119:17
footnote [1] - 202:14
FOR [2] - 1:12, 1:17
forced [2] - 75:11, 159:12
forces [1] - 60:14
foregoing [1] - 205:7
foreign [10] - 31:3, 53:8, 72:23, 73:14, 73:17, 75:21, 76:11, 106:21, 107:7, 117:25
forensic [2] - 15:17, 143:7
forensically [4] - 94:9, 94:19, 96:12, 172:4
forever [2] - 165:14, 165:24
forfeiture [1] - 4:10
forgive [1] - 134:5
form [2] - 128:2, 170:12
format [1] - 205:10

formatting [1] - 129:10
former [1] - 104:14
Fort [1] - 1:14
forth [6] - 8:13, 37:22, 131:9, 134:14, 162:18, 162:19
forthcoming [2] - 117:5, 173:2
forthright [1] - 166:25
forum [9] - 31:20, 31:23, 38:6, 38:8, 38:9, 38:10, 86:3, 86:5, 86:6
forums [1] - 31:19
forward [2] - 121:25, 131:15
forwarded [1] - 136:7
foundation [3] - 69:19, 111:17, 119:2
four [8] - 4:10, 8:8, 10:13, 43:12, 101:15, 104:4, 108:14, 150:18
four-digit [1] - 108:14
four-week [1] - 10:13
Fourth [10] - 13:12, 145:23, 156:14, 156:15, 158:2, 176:7, 177:17, 194:17, 197:8, 199:10
fourth [1] - 79:17
framed [1] - 151:10
Franciscan [1] - 154:4
frank [1] - 127:13
frankly [3] - 78:6, 82:1, 177:6
Franks [1] - 56:15
free [10] - 49:22, 102:4, 119:13, 121:16, 122:21, 131:5, 156:6, 156:9, 156:11, 157:16
Freedom [6] - 122:3, 122:11, 122:17, 124:22, 168:21, 172:22
freely [2] - 19:5, 23:15
frequently [4] - 17:22, 51:12, 68:24, 131:5
front [4] - 20:20, 81:20, 114:1, 128:18
fruit [2] - 90:14, 202:6
fruits [2] - 13:10, 90:6
frustrating [1] - 169:14
FTC [2] - 160:22, 160:24
full [6] - 75:22, 94:12,

101:15, 187:11, 188:24
fully [2] - 13:1, 87:9
function [2] - 6:21, 19:19
functionality [2] - 19:20, 100:21
functions [2] - 18:25, 70:16
fund [1] - 101:19
funders [1] - 101:19
funding [1] - 107:4
furtherance [1] - 28:6
future [1] - 171:20

G

gag [3] - 68:5, 68:18, 69:16
gain [3] - 87:17, 119:17, 171:21
gained [1] - 109:22
gaining [2] - 8:10, 9:4
gate [1] - 187:10
gathering [1] - 195:20
general [9] - 37:8, 46:14, 51:20, 86:4, 106:7, 140:24, 160:5, 160:10, 195:19
generalities [1] - 168:10
generally [27] - 4:20, 6:15, 7:12, 18:21, 19:12, 19:21, 20:6, 24:7, 24:12, 28:8, 29:8, 29:13, 30:7, 32:3, 32:10, 37:19, 43:22, 44:12, 46:16, 46:25, 47:23, 52:7, 57:12, 57:15, 76:20, 83:2, 89:21
generated [5] - 40:5, 40:8, 41:16, 45:20, 86:21
generic [1] - 52:21
genitals [1] - 22:20
gentlemen [1] - 174:14
geographical [1] - 12:8
geographically [1] - 182:20
geolocate [1] - 47:23
geolooked [1] - 77:6
girls [3] - 29:9, 29:15, 29:25
Girls [5] - 27:22, 31:23, 31:25, 38:7, 44:25

given [14] - 7:5, 38:17, 43:2, 43:23, 71:21, 102:9, 106:3, 107:13, 112:17, 129:5, 140:11, 153:8, 153:20, 173:21
goal [1] - 182:9
Google [6] - 16:17, 18:20, 19:21, 70:16, 175:2, 201:2
Google.com [3] - 16:13, 16:16, 17:4
government [222] - 4:23, 7:22, 9:1, 10:5, 10:14, 10:23, 11:4, 11:9, 12:14, 12:22, 12:25, 13:6, 13:17, 36:25, 37:14, 45:9, 47:5, 60:25, 61:8, 63:22, 64:2, 67:23, 75:10, 75:18, 75:20, 76:5, 77:2, 77:11, 77:19, 78:4, 79:4, 84:22, 90:24, 90:25, 92:15, 93:20, 93:25, 100:4, 100:5, 101:11, 101:12, 101:13, 102:5, 103:2, 103:24, 104:2, 104:7, 104:14, 104:18, 105:18, 107:7, 107:8, 107:10, 107:14, 107:19, 107:20, 107:22, 109:12, 109:15, 109:19, 110:20, 111:12, 112:16, 112:19, 112:23, 113:3, 114:4, 114:9, 114:10, 114:12, 114:16, 114:22, 115:10, 116:5, 117:4, 117:14, 118:17, 118:21, 120:13, 121:9, 121:10, 121:14, 121:15, 122:4, 122:5, 122:10, 122:18, 122:20, 123:6, 123:9, 124:9, 124:14, 125:6, 125:9, 125:15, 125:20, 126:9, 127:9, 128:4, 128:5, 128:7, 128:9, 128:11, 128:13, 129:19, 129:20, 130:1, 130:5, 130:6,

130:11, 132:4, 132:6, 132:13, 132:16, 134:13, 134:21, 134:23, 134:24, 135:4, 135:21, 136:16, 136:22, 137:1, 137:3, 138:16, 139:4, 139:6, 139:7, 140:2, 140:11, 140:16, 140:17, 140:18, 140:21, 141:4, 141:11, 142:3, 143:3, 143:4, 143:5, 143:10, 143:11, 143:25, 144:12, 144:19, 145:1, 147:6, 148:8, 148:9, 148:14, 148:21, 149:3, 149:10, 150:12, 150:17, 151:15, 151:18, 151:19, 152:14, 152:16, 152:20, 153:13, 159:23, 160:14, 161:10, 161:16, 161:18, 163:16, 164:7, 164:10, 165:20, 167:6, 168:16, 168:22, 168:24, 168:25, 169:1, 169:2, 169:4, 169:9, 169:13, 169:21, 170:11, 170:21, 171:8, 171:11, 171:23, 172:1, 172:2, 172:8, 172:15, 172:18, 172:20, 172:22, 173:1, 173:5, 183:17, 184:9, 184:12, 184:18, 184:22, 185:22, 188:8, 190:12, 194:4, 194:19, 195:1, 195:18, 196:2, 196:18, 197:4, 197:16, 197:25, 199:17, 199:20, 199:22, 200:3, 200:11, 202:13, 202:21
Government [14] - 2:4, 3:15, 13:15, 51:2, 55:9, 106:23, 107:4, 123:18, 123:22, 124:6, 152:24, 159:14, 171:14, 171:18
GOVERNMENT [3] -

<p>1:12, 2:11, 174:23 GOVERNMENT'S [1] - 3:3 government's [24] - 5:14, 7:13, 9:6, 11:20, 22:4, 27:8, 63:11, 77:18, 78:11, 82:10, 105:21, 109:16, 115:24, 131:10, 131:11, 136:10, 139:15, 140:19, 142:11, 148:25, 149:14, 153:15, 164:13, 195:21 Government's [10] - 20:18, 22:2, 22:7, 25:8, 25:10, 26:4, 27:6, 28:15, 31:15, 34:8 Government..... [1] - 2:6 governments [3] - 106:21, 107:7, 117:25 GPS [4] - 186:25, 187:23, 191:16, 192:13 graduate [1] - 158:11 granted [3] - 119:4, 175:11, 178:10 gray [1] - 176:3 great [2] - 16:1, 203:21 grossly [1] - 181:10 grounds [1] - 197:24 growth [1] - 29:10 guarantee [4] - 153:4, 154:12, 162:12, 162:13 guaranteed [1] - 166:2 guard [2] - 107:18 guarding [1] - 74:20 guess [11] - 60:19, 64:12, 64:14, 64:15, 79:19, 111:9, 112:21, 144:11, 185:12, 193:5, 193:11 guessing [1] - 21:4 guilty [2] - 157:21, 157:23 guy [2] - 68:12, 78:20</p>	<p>hacker [1] - 40:2 hacking [5] - 15:2, 15:3, 117:1, 124:3, 196:17 hacks [1] - 124:15 half [5] - 83:18, 84:6, 89:17, 104:10, 116:16 half-dozen [4] - 83:18, 84:6, 89:17, 104:10 hallway [1] - 6:23 hand [15] - 10:23, 22:16, 39:2, 44:21, 64:10, 74:18, 77:21, 83:22, 86:21, 88:21, 94:22, 95:3, 97:7, 128:8, 150:14 handing [1] - 130:21 hands [5] - 115:14, 124:14, 166:13, 171:3, 171:6 hang [1] - 132:22 happy [1] - 160:22 hard [11] - 21:10, 21:14, 21:20, 105:17, 106:14, 106:25, 108:19, 108:21, 117:2, 162:22, 163:1 hard-end [1] - 105:17 Hardcore [5] - 27:22, 31:23, 31:25, 38:8, 44:25 hardcore [1] - 29:19 hardwired [2] - 44:7, 44:16 harvest [7] - 87:1, 90:6, 140:20, 144:2, 146:11, 148:1, 148:14 harvested [12] - 88:24, 89:18, 90:16, 137:24, 141:1, 147:12, 148:2, 148:4, 151:1, 184:14, 194:15 harvesting [1] - 77:20 harvests [1] - 86:9 Hayden [3] - 1:23, 205:3, 205:17 HC [1] - 29:18 headquarters [2] - 5:16, 14:12 hear [3] - 7:7, 59:6, 92:5 heard [9] - 15:25, 102:8, 109:10, 112:24, 150:12, 151:22, 177:22, 197:10, 203:1</p>	<p>hearing [11] - 4:8, 5:3, 7:9, 49:16, 49:19, 49:24, 56:15, 67:19, 69:4, 69:22, 146:24 HEARING [2] - 1:9, 2:1 hearings [1] - 39:2 heat [1] - 195:20 heavily [3] - 31:6, 73:6, 75:14 held [3] - 179:21, 180:1, 205:8 help [13] - 72:18, 76:17, 85:17, 87:16, 90:11, 90:12, 91:21, 95:2, 124:23, 142:23, 143:23, 165:17, 174:2 helpful [1] - 119:22 helping [1] - 161:21 hereby [1] - 205:5 Herring [1] - 181:18 hidden [31] - 16:22, 16:24, 17:1, 17:5, 17:6, 17:8, 17:10, 17:13, 17:14, 17:15, 17:21, 18:16, 18:21, 19:2, 19:15, 19:18, 21:11, 21:12, 21:13, 21:21, 32:18, 36:17, 37:13, 53:19, 70:11, 70:17, 101:6, 101:7, 101:8, 101:10, 163:14 hide [5] - 102:1, 102:5, 103:5, 138:13, 163:15 high [5] - 92:20, 165:22, 166:16, 166:20, 170:14 high-level [1] - 166:20 highway [1] - 119:16 history [1] - 118:17 hit [5] - 116:7, 167:6, 169:8, 169:10, 169:13 hitting [1] - 116:2 hole [5] - 118:1, 118:4, 118:6, 120:11, 123:7 holes [1] - 145:12 home [20] - 34:9, 35:5, 43:23, 44:1, 99:16, 119:20, 125:19, 128:16, 130:17, 135:21, 135:23, 136:5, 138:17, 138:21, 139:3, 139:18, 140:15, 141:6, 179:17 Home [1] - 3:6</p>	<p>homepage [7] - 25:13, 35:8, 54:23, 54:24, 103:22, 162:8, 169:3 honest [2] - 162:14, 173:24 Honor [106] - 5:14, 5:23, 6:2, 6:4, 13:16, 13:23, 22:1, 25:7, 25:9, 27:5, 27:7, 31:13, 31:16, 40:3, 49:14, 50:3, 50:13, 50:16, 52:10, 52:22, 56:13, 56:22, 56:24, 65:23, 66:23, 67:10, 67:20, 67:23, 68:22, 69:10, 70:2, 71:5, 71:19, 71:21, 72:15, 74:10, 74:17, 75:6, 76:8, 78:24, 79:19, 80:11, 80:15, 80:24, 81:23, 85:11, 85:16, 85:22, 88:7, 88:12, 89:1, 89:6, 89:11, 89:15, 90:10, 90:19, 90:25, 93:6, 93:11, 93:18, 93:22, 96:17, 96:20, 96:22, 96:24, 97:1, 97:12, 111:16, 118:11, 118:12, 119:1, 119:23, 127:17, 128:21, 128:25, 130:18, 132:17, 132:25, 133:2, 137:13, 138:1, 141:19, 144:11, 146:25, 152:1, 152:3, 153:16, 169:16, 169:18, 173:11, 174:6, 174:8, 174:13, 174:20, 178:8, 180:11, 182:7, 183:12, 183:14, 184:17, 187:1, 187:19, 187:24, 189:20, 192:22, 194:16 honor [1] - 5:21 HONORABLE [1] - 1:9 hop [1] - 135:3 hope [2] - 149:11, 153:13 hopefully [1] - 8:22 hoping [1] - 150:17 Hopkins [1] - 98:14 horrible [1] - 166:11 host [3] - 17:22, 86:12, 88:25 hosted [1] - 33:8 Hosting [6] - 122:3,</p>	<p>122:11, 122:18, 124:22, 168:21, 172:22 hosting [4] - 33:6, 34:1, 53:14, 122:2 hostname [3] - 41:12, 63:5, 96:1 hotel [1] - 98:7 hour [1] - 69:7 hours [5] - 34:10, 35:1, 40:15, 41:19, 42:4 house [16] - 47:21, 84:13, 90:14, 107:18, 107:21, 137:11, 138:4, 138:8, 138:13, 144:7, 148:24, 158:23, 194:13, 195:21, 195:25, 196:7 House [2] - 168:17, 171:15 household [3] - 43:15, 43:18, 141:2 Houston [1] - 116:10 human [4] - 107:23, 128:2, 132:2, 132:9 human-readable [2] - 132:2, 132:9 humans [4] - 106:9, 106:10, 108:1 hundred [2] - 6:13, 108:8 hundreds [6] - 16:5, 73:2, 115:17, 121:7, 123:15, 124:10 hung [1] - 71:9 hunt [1] - 118:4 hurdle [2] - 200:6, 200:12 husband [1] - 138:5</p>
H				
<p>hack [3] - 106:22, 123:22, 197:5 hacked [2] - 123:19, 172:12</p>	<p>ID [4] - 9:4, 87:19, 87:22, 189:4 idea [5] - 24:3, 32:24, 34:23, 156:2, 179:4 identical [1] - 64:3 identification [2] - 22:7, 127:21 identified [12] - 36:6, 63:2, 65:9, 72:12, 72:21, 74:19, 84:2, 84:21, 85:7, 104:2, 111:24, 164:25 identifier [6] - 44:5, 44:17, 112:10, 112:14, 112:17,</p>			

<p>180:7</p> <p>identifier's [1] - 112:18</p> <p>identify [22] - 32:19, 32:20, 33:11, 33:14, 36:21, 37:7, 37:18, 43:4, 45:18, 47:7, 47:15, 57:9, 76:2, 76:10, 95:11, 100:17, 100:22, 116:17, 116:23, 164:15, 164:22, 168:20</p> <p>identifying [8] - 9:10, 17:9, 59:20, 78:15, 88:18, 113:2, 172:16, 182:9</p> <p>identities [2] - 9:20, 10:3</p> <p>identity [8] - 10:9, 105:11, 125:20, 146:14, 163:10, 175:1, 178:18, 179:2</p> <p>ignore [1] - 181:17</p> <p>ignored [1] - 159:9</p> <p>Ill [5] - 81:12, 81:18, 82:3, 82:7, 82:23</p> <p>Ills [1] - 81:21</p> <p>illegal [8] - 21:14, 23:14, 24:5, 84:24, 161:23, 164:1, 164:3, 174:25</p> <p>illegally [1] - 164:2</p> <p>illegitimate [1] - 163:6</p> <p>illustration [1] - 194:9</p> <p>image [2] - 23:7, 56:5</p> <p>images [12] - 4:13, 11:5, 22:17, 28:9, 28:17, 29:12, 30:12, 32:4, 32:11, 32:12, 41:1</p> <p>imagine [1] - 171:19</p> <p>immediately [4] - 32:12, 58:8, 58:10, 87:14</p> <p>immune [1] - 178:18</p> <p>impact [2] - 7:1, 61:10</p> <p>impersonated [3] - 114:12, 115:2, 125:16</p> <p>implementation [1] - 38:2</p> <p>implying [2] - 51:25, 70:20</p> <p>importance [4] - 33:22, 94:17, 126:14, 144:17</p> <p>important [18] - 89:5, 113:19, 114:25, 115:18, 120:4,</p>	<p>123:3, 134:7, 134:19, 134:20, 136:15, 136:16, 138:15, 139:24, 141:14, 197:18, 200:1, 203:22</p> <p>importantly [1] - 34:11</p> <p>impossible [5] - 23:20, 57:13, 102:10, 102:14, 102:23</p> <p>improper [1] - 12:16</p> <p>impropriety [1] - 77:22</p> <p>improvements [1] - 101:17</p> <p>IN [2] - 133:18, 133:22</p> <p>inadvertently [2] - 118:18, 124:5</p> <p>inapplicable [1] - 191:24</p> <p>inception [2] - 201:20, 201:25</p> <p>incident [3] - 11:6, 11:19, 11:20</p> <p>include [5] - 22:23, 24:6, 40:21, 148:13, 149:23</p> <p>included [1] - 82:3</p> <p>including [5] - 15:1, 30:16, 40:6, 98:21, 106:23</p> <p>inconsistent [1] - 181:17</p> <p>incorrect [2] - 155:22, 156:1</p> <p>incredibly [1] - 20:14</p> <p>independent [1] - 40:12</p> <p>independently [1] - 33:6</p> <p>INDEX [1] - 3:1</p> <p>index [10] - 19:13, 27:14, 27:16, 28:16, 28:18, 28:19, 29:20, 44:24, 70:22, 203:3</p> <p>Index [1] - 3:8</p> <p>indexes [2] - 203:3, 203:5</p> <p>Indiana [2] - 98:15, 158:6</p> <p>indicate [1] - 23:10</p> <p>indicated [3] - 30:11, 34:24, 174:15</p> <p>indicates [1] - 12:14</p> <p>indicating [3] - 23:5, 35:3, 55:1</p> <p>indication [1] - 65:13</p> <p>indicative [2] - 27:18, 51:8</p>	<p>indicted [1] - 4:9</p> <p>indictment [1] - 7:14</p> <p>individual [16] - 37:25, 48:3, 54:10, 63:24, 65:18, 65:22, 66:9, 66:18, 89:7, 90:3, 95:4, 95:6, 95:8, 96:7, 112:22, 196:21</p> <p>individual's [1] - 48:8</p> <p>individuals [21] - 15:7, 39:6, 53:13, 57:14, 58:22, 65:14, 66:6, 67:3, 72:6, 72:11, 72:20, 73:18, 74:19, 74:21, 75:3, 75:11, 75:23, 76:11, 131:3, 196:17</p> <p>industry [1] - 160:6</p> <p>infected [4] - 135:22, 189:8, 191:10, 192:5</p> <p>infection [1] - 189:17</p> <p>infirmary [2] - 76:21, 198:8</p> <p>inform [1] - 202:12</p> <p>informant [2] - 79:8, 79:13</p> <p>informatics [1] - 98:13</p> <p>information [179] - 4:22, 9:10, 10:8, 10:23, 11:11, 11:15, 17:9, 27:1, 33:5, 33:7, 35:21, 36:20, 40:11, 40:13, 40:14, 40:17, 40:21, 41:11, 41:14, 41:24, 42:13, 43:6, 45:12, 45:14, 45:16, 45:23, 47:3, 47:6, 47:19, 48:17, 48:19, 49:18, 51:11, 53:7, 59:21, 61:7, 62:9, 62:11, 62:13, 62:16, 63:1, 63:7, 63:13, 63:21, 64:1, 64:4, 68:1, 69:6, 72:23, 73:9, 73:25, 74:8, 75:7, 75:13, 76:14, 76:22, 77:20, 78:1, 78:9, 79:16, 80:2, 80:3, 80:7, 81:8, 83:16, 83:17, 83:20, 83:21, 83:23, 83:25, 84:2, 84:7, 84:9, 84:10, 84:20, 85:6, 85:14, 86:8, 86:19, 86:24, 87:1, 88:19, 88:23, 89:5, 89:8, 89:17, 89:18, 89:24, 90:4, 90:7, 90:16, 91:6, 91:17, 92:7, 92:14, 92:16,</p>	<p>93:3, 94:4, 94:15, 105:5, 105:15, 109:25, 110:3, 110:4, 110:15, 111:15, 112:15, 113:10, 113:12, 114:20, 114:22, 114:25, 115:21, 116:13, 116:15, 117:6, 118:18, 120:5, 123:14, 125:24, 126:6, 126:11, 127:1, 127:3, 127:6, 127:9, 128:14, 128:19, 129:7, 129:12, 129:22, 130:10, 133:13, 134:21, 136:9, 139:25, 144:4, 144:6, 144:16, 144:22, 145:9, 145:20, 145:25, 146:13, 147:12, 148:3, 148:19, 149:2, 150:19, 150:22, 151:13, 170:5, 172:19, 173:2, 180:6, 181:23, 184:9, 184:13, 186:5, 191:5, 191:6, 191:9, 191:21, 191:23, 192:24, 193:3, 194:19, 195:14, 195:23, 196:2, 196:4, 196:12, 196:21, 198:25, 201:5, 201:6, 202:23</p> <p>informed [4] - 49:3, 49:6, 49:8, 100:6</p> <p>init [1] - 192:17</p> <p>initiate [1] - 88:14</p> <p>initiates [1] - 193:7</p> <p>innocent [13] - 24:4, 115:16, 116:2, 116:6, 124:3, 126:4, 126:7, 157:23, 165:5, 167:6, 168:20, 169:5, 169:7</p> <p>inquire [2] - 50:2, 97:11</p> <p>inquiry [3] - 69:15, 69:20, 82:5</p> <p>inside [9] - 23:24, 24:1, 107:21, 130:8, 140:19, 186:18, 189:3, 190:24, 196:7</p> <p>install [3] - 19:8, 188:3, 196:10</p>	<p>installation [4] - 189:14, 189:22, 191:22, 193:21</p> <p>installed [7] - 120:17, 189:25, 190:2, 191:13, 192:13, 192:14</p> <p>instance [3] - 78:2, 84:1, 144:1</p> <p>instances [5] - 32:12, 46:9, 62:15, 91:19, 91:24</p> <p>instantaneous [1] - 86:10</p> <p>instantaneously [1] - 86:10</p> <p>instructed [1] - 153:17</p> <p>instructions [6] - 26:15, 60:21, 86:16, 107:14, 109:23, 111:13</p> <p>instructive [1] - 175:13</p> <p>instructor [1] - 15:18</p> <p>instrument [1] - 193:1</p> <p>integrity [3] - 170:25, 171:2, 171:21</p> <p>intends [3] - 5:8, 111:12, 115:10</p> <p>intent [1] - 36:7</p> <p>intentional [2] - 177:14, 178:2</p> <p>intentionally [3] - 80:3, 186:1, 186:12</p> <p>intercepted [2] - 151:8, 170:3</p> <p>interest [4] - 33:20, 158:10, 158:22, 159:1</p> <p>interested [2] - 30:8, 89:22</p> <p>interesting [5] - 90:11, 122:3, 143:21, 146:23, 156:15</p> <p>internal [12] - 136:2, 136:14, 138:16, 138:17, 138:19, 138:22, 139:1, 139:6, 139:20, 141:5, 142:11, 172:3</p> <p>internally [1] - 136:3</p> <p>international [1] - 76:9</p> <p>internationally [1] - 71:14</p> <p>Internet [91] - 9:18, 9:19, 9:20, 10:4, 16:4, 16:5, 16:9, 16:10, 16:12, 16:23, 17:3, 18:25, 19:17,</p>
--	--	---	---	---

42:18, 42:20, 42:21,
42:22, 43:1, 43:3,
43:7, 43:10, 43:11,
43:13, 43:17, 43:21,
43:22, 43:24, 43:25,
44:10, 44:14, 47:2,
47:5, 47:15, 48:9,
48:11, 48:15, 48:17,
53:12, 53:17, 53:25,
54:3, 69:14, 70:25,
74:12, 74:15, 85:20,
89:9, 89:12, 89:19,
91:7, 91:18, 92:10,
100:12, 101:1,
103:12, 103:13,
103:19, 115:11,
121:16, 131:20,
131:21, 135:2,
136:24, 137:7,
137:8, 138:2, 138:9,
139:4, 139:10,
140:13, 141:3,
143:15, 146:15,
149:11, 150:13,
150:22, 162:17,
162:20, 163:24,
164:19, 171:2,
172:6, 179:22,
180:5, 180:10,
180:12, 188:22,
189:5, 193:25,
196:11, 203:2
interpretation [2] -
82:10, 133:8
interpreted [1] -
175:21
interpreting [1] -
143:1
interrupt [3] - 133:10,
141:18, 143:20
interstate [3] - 119:12,
188:22, 190:22
Interstate [1] - 188:17
interview [1] - 11:20
introduce [2] - 5:12,
5:25
invalid [1] - 201:19
invalidate [1] - 78:10
invasion [1] - 120:6
invasive [1] - 195:20
invented [1] - 87:19
investigate [5] - 15:7,
166:12, 172:10,
175:10, 175:16
investigated [2] -
14:25, 101:25
investigating [4] -
45:13, 187:12,
189:12, 197:6
investigation [22] -

8:2, 8:9, 15:12, 18:1,
24:21, 33:9, 67:9,
70:5, 73:10, 73:16,
75:7, 76:10, 82:13,
82:22, 88:1, 115:5,
158:24, 159:1,
168:21, 174:24,
179:10, 181:17
Investigation [2] -
14:11, 14:16
investigations [7] -
15:16, 71:13, 72:14,
73:4, 73:23, 74:2,
101:24
Investigative [1] -
14:12
investigative [9] -
7:24, 8:20, 17:25,
33:1, 37:3, 37:17,
101:21, 103:25,
146:2
investigators [2] -
90:1, 101:23
invited [1] - 6:22
involved [11] - 18:2,
46:10, 74:8, 81:11,
81:13, 81:14, 82:6,
83:10, 104:17,
156:16, 158:3
involves [1] - 180:6
involving [10] - 15:16,
15:19, 30:24, 38:20,
51:9, 117:9, 117:10,
119:25, 157:12,
200:23
IP [170] - 9:9, 9:10,
9:20, 10:19, 10:20,
10:22, 11:16, 16:18,
17:8, 17:13, 41:11,
42:16, 42:17, 42:20,
42:24, 43:3, 43:4,
43:8, 43:13, 43:21,
43:24, 44:1, 44:13,
45:17, 46:21, 46:24,
47:5, 47:6, 47:10,
47:11, 47:14, 47:22,
47:24, 48:1, 48:2,
48:10, 48:13, 53:15,
53:25, 74:9, 74:22,
74:23, 75:2, 75:5,
75:19, 76:18, 77:3,
77:6, 77:9, 77:12,
77:13, 77:15, 88:18,
89:3, 89:13, 89:21,
89:22, 89:23, 90:2,
90:8, 90:19, 92:11,
92:15, 92:17, 92:23,
92:25, 93:1, 93:2,
94:16, 103:21,
105:9, 105:14,

113:13, 127:11,
129:8, 129:10,
129:12, 129:14,
129:15, 129:18,
129:20, 130:7,
130:12, 130:13,
130:16, 133:7,
134:17, 134:18,
134:19, 134:20,
135:21, 135:23,
135:25, 136:2,
136:8, 136:9,
136:10, 137:9,
137:10, 137:23,
138:3, 138:13,
138:18, 138:22,
139:1, 139:5,
139:11, 139:12,
139:14, 139:22,
140:21, 141:1,
141:8, 141:13,
141:14, 141:24,
141:25, 142:6,
142:10, 144:2,
144:17, 144:21,
145:5, 146:12,
146:14, 147:3,
147:11, 147:13,
147:21, 148:1,
148:13, 148:15,
148:17, 148:19,
148:21, 148:22,
149:2, 149:4,
149:20, 149:22,
150:2, 150:8,
150:10, 150:13,
150:15, 150:19,
151:1, 151:11,
151:13, 151:16,
164:13, 180:2,
180:7, 182:16,
193:25, 196:3,
196:5, 196:16,
196:22, 196:23,
198:1, 198:8, 198:10
iPad [1] - 138:6
iPhone [1] - 170:9
Iranian [2] - 123:19,
123:22
irrelevant [3] - 64:18,
64:20, 65:24
ISP [1] - 140:22
Israel [1] - 123:19
issuance [2] - 12:5,
81:16
issue [33] - 5:5, 5:6,
6:15, 9:1, 12:8, 13:4,
13:7, 47:14, 49:21,
68:5, 76:23, 82:12,
83:9, 114:6, 144:10,

146:24, 156:8,
156:13, 158:19,
159:6, 159:9,
173:13, 176:6,
177:6, 178:4,
179:20, 182:5,
184:6, 186:25,
191:3, 197:15,
200:15, 201:13
issued [10] - 11:13,
11:17, 11:24, 77:25,
79:17, 120:21,
140:21, 184:25,
199:14, 201:8
issues [13] - 4:23, 6:4,
7:2, 12:1, 12:3,
118:22, 126:16,
156:15, 156:17,
158:3, 175:18,
178:23, 203:22
issuing [7] - 13:2,
77:23, 77:24, 77:25,
182:21, 189:23,
190:18
items [6] - 41:6, 41:7,
63:2, 83:18, 84:7,
89:3
itself [5] - 9:7, 10:17,
21:12, 35:14, 122:22

J

jailbait [2] - 29:7, 29:8
jam [1] - 126:4
James [1] - 98:12
Jean [18] - 4:3, 4:5,
4:8, 4:11, 7:14, 7:23,
11:7, 11:20, 12:13,
47:17, 49:6, 64:18,
65:25, 74:7, 78:16,
95:24, 140:21,
188:16
JEAN [1] - 1:6
Jean's [22] - 10:17,
11:3, 11:16, 11:18,
60:9, 62:19, 62:20,
92:18, 94:5, 94:11,
95:25, 96:5, 99:25,
130:12, 141:1,
141:6, 141:25,
142:3, 142:9,
147:11, 150:10,
178:16
jeopardize [1] - 73:22
Jersey [1] - 98:22
job [2] - 15:23, 181:7
Joe [1] - 50:19
Joe_Alfaro@fd.org
[1] - 1:21
Johns [1] - 98:14

join [1] - 102:7
Jose [1] - 1:18
journalistic [1] - 76:15
journals [1] - 98:19
judge [82] - 8:17, 9:1,
10:6, 10:11, 10:15,
11:14, 12:7, 13:1,
15:25, 49:11, 57:5,
79:6, 79:16, 80:4,
80:23, 81:11, 81:16,
81:20, 81:24, 82:6,
82:7, 82:11, 82:15,
82:17, 82:19, 82:20,
82:21, 83:1, 83:3,
83:6, 83:7, 83:9,
83:12, 83:19, 100:6,
111:19, 115:9,
115:24, 116:2,
116:3, 119:8,
124:11, 133:12,
135:13, 135:17,
143:25, 144:14,
145:17, 146:10,
146:20, 165:21,
166:5, 166:16,
166:21, 167:2,
175:11, 182:21,
182:24, 182:25,
183:21, 184:12,
184:20, 184:23,
185:13, 185:15,
186:12, 186:21,
187:15, 188:2,
191:15, 194:2,
194:10, 197:21,
198:12, 199:3,
199:14, 200:8,
201:1, 201:12,
203:13
Judge [43] - 11:1,
11:17, 38:23, 52:13,
55:25, 56:11, 57:2,
76:25, 79:11, 79:24,
91:14, 93:5, 112:2,
116:10, 133:16,
133:19, 135:10,
168:7, 168:11,
173:14, 183:17,
184:2, 185:12,
185:19, 186:8,
190:10, 191:3,
191:12, 191:25,
192:7, 196:15,
196:25, 197:9,
197:24, 198:3,
198:14, 198:20,
199:20, 200:18,
201:22, 202:7,
203:12, 203:14
judge's [5] - 12:11,

<p>13:8, 135:14, 177:2, 198:11</p> <p>judges [12] - 6:13, 6:21, 12:6, 99:19, 115:21, 117:7, 118:23, 125:24, 166:6, 186:18, 186:23, 197:14</p> <p>judgment [1] - 144:24</p> <p>Judicial [2] - 99:21, 205:11</p> <p>judicial [7] - 6:11, 6:14, 81:3, 81:5, 99:5, 165:19, 197:13</p> <p>judiciary [1] - 115:5</p> <p>July [3] - 14:18, 14:20, 205:12</p> <p>jump [2] - 35:13, 188:22</p> <p>jumped [3] - 188:16, 188:22, 190:22</p> <p>June [2] - 1:10, 2:3</p> <p>jurisdiction [4] - 12:8, 181:15, 187:17, 201:14</p> <p>jurisdictional [2] - 200:9, 200:16</p> <p>jury [2] - 68:9, 68:17</p> <p>Justice [1] - 99:11</p> <p>justifying [1] - 172:8</p>	<p>192:4, 193:11, 193:14</p> <p>knocks [1] - 191:8</p> <p>knowing [16] - 4:11, 20:16, 24:5, 72:19, 76:17, 76:22, 79:8, 95:17, 149:3, 149:8, 149:15, 151:15, 169:4, 179:3, 182:14, 182:17</p> <p>knowingly [1] - 4:13</p> <p>knowledge [15] - 19:12, 46:5, 53:4, 83:14, 83:16, 84:4, 95:22, 119:9, 132:15, 142:13, 168:19, 169:6, 172:14, 175:5, 180:15</p> <p>known [23] - 7:16, 9:15, 9:25, 79:20, 79:21, 95:6, 95:9, 95:10, 95:19, 95:24, 96:2, 96:8, 103:20, 120:16, 120:22, 123:13, 136:24, 147:7, 152:21, 178:24, 181:16, 181:25</p> <p>knows [1] - 199:23</p> <p>Kyllo [1] - 195:17</p>	<p>latter [1] - 102:18</p> <p>law [40] - 4:12, 4:14, 7:4, 8:2, 8:11, 8:15, 9:11, 11:1, 12:13, 12:18, 21:6, 39:14, 39:22, 53:8, 72:23, 74:19, 75:25, 79:21, 83:15, 83:17, 98:15, 98:19, 115:16, 122:23, 154:5, 154:10, 165:14, 166:8, 175:9, 176:3, 177:17, 178:6, 178:22, 180:21, 181:14, 182:10, 182:19, 184:5, 185:21, 187:12</p> <p>law-abiding [2] - 115:16, 122:23</p> <p>lawful [1] - 182:13</p> <p>lawyer [2] - 170:21, 174:3</p> <p>lawyers [2] - 157:24, 161:21</p> <p>lay [2] - 111:17, 118:20</p> <p>layer [1] - 195:16</p> <p>laying [1] - 119:2</p> <p>layman [1] - 76:25</p> <p>layman's [3] - 43:19, 111:8, 111:9</p> <p>layperson [1] - 114:3</p> <p>lead [4] - 5:17, 10:9, 65:20, 164:11</p> <p>leading [2] - 35:1, 98:19</p> <p>learn [1] - 19:3</p> <p>learned [5] - 104:9, 114:11, 129:20, 130:5, 130:6</p> <p>least [21] - 7:13, 11:8, 25:25, 68:25, 74:7, 118:18, 118:19, 122:19, 136:9, 139:13, 139:15, 139:19, 139:23, 141:10, 147:6, 148:20, 148:24, 150:16, 151:12, 151:14, 173:1</p> <p>leave [2] - 133:19, 187:17</p> <p>leaves [1] - 188:12</p> <p>leaving [3] - 55:17, 55:24, 68:21</p> <p>led [7] - 11:15, 11:16, 11:17, 12:13, 147:15, 148:24, 201:9</p> <p>left [18] - 22:16, 49:10,</p>	<p>61:9, 68:3, 87:12, 87:14, 136:23, 138:23, 140:14, 140:15, 143:17, 150:14, 159:18, 164:8, 180:20, 186:8, 190:2, 190:25</p> <p>left-hand [2] - 22:16, 150:14</p> <p>legal [11] - 39:24, 51:12, 51:13, 73:13, 84:24, 99:2, 104:18, 111:18, 160:8, 160:20, 203:8</p> <p>legislation [1] - 200:11</p> <p>legislative [2] - 99:4, 154:6</p> <p>legitimate [3] - 9:23, 163:4, 163:5</p> <p>legs [1] - 22:20</p> <p>Leon [1] - 201:24</p> <p>less [4] - 67:4, 91:23, 170:24, 170:25</p> <p>letter [13] - 115:7, 129:23, 129:24, 129:25, 130:9, 140:24, 148:5, 148:6, 150:6, 151:9, 198:23, 199:14</p> <p>level [9] - 19:11, 41:23, 77:14, 92:19, 92:20, 165:22, 166:16, 166:20, 170:14</p> <p>levels [1] - 179:18</p> <p>Levin [4] - 157:1, 176:12, 188:2, 201:22</p> <p>Liberties [1] - 97:22</p> <p>liberties [1] - 199:21</p> <p>likely [5] - 87:9, 91:23, 172:12, 172:13</p> <p>liken [1] - 196:1</p> <p>limited [3] - 86:24, 182:8, 182:20</p> <p>linchpin [1] - 77:2</p> <p>line [13] - 29:22, 29:23, 51:10, 56:14, 56:24, 134:14, 136:1, 142:4, 142:5, 142:8, 147:3, 166:17</p> <p>lines [4] - 24:18, 106:12, 193:8, 193:9</p> <p>link [19] - 11:12, 12:12, 18:10, 19:10, 21:8, 21:9, 22:9, 22:10, 22:15, 23:7, 23:8, 24:13, 25:21, 26:8, 31:23, 31:24,</p>	<p>32:11, 52:7, 77:5</p> <p>linked [1] - 21:15</p> <p>links [12] - 18:7, 18:8, 19:12, 19:14, 20:7, 20:9, 21:12, 27:23, 28:9, 30:12, 70:21, 90:3</p> <p>Linux [1] - 113:11</p> <p>lion [1] - 118:2</p> <p>list [5] - 19:14, 20:3, 20:9, 38:9, 158:22</p> <p>listed [3] - 20:2, 29:24, 30:6</p> <p>listening [1] - 103:1</p> <p>lists [2] - 19:16, 19:21</p> <p>live [1] - 188:21</p> <p>load [1] - 190:24</p> <p>loaded [1] - 132:6</p> <p>loads [1] - 87:10</p> <p>locally [1] - 10:24</p> <p>locate [2] - 16:20, 197:12</p> <p>located [43] - 7:24, 7:25, 14:14, 18:14, 21:23, 32:19, 34:4, 36:10, 36:12, 47:18, 62:14, 76:6, 121:19, 121:21, 167:5, 167:10, 167:24, 176:19, 178:24, 179:5, 181:23, 182:17, 183:20, 184:3, 184:8, 184:22, 185:3, 185:4, 185:7, 185:9, 185:16, 185:23, 186:2, 186:5, 186:14, 188:6, 188:9, 188:14, 188:20, 189:6, 189:19, 192:12, 192:20</p> <p>location [14] - 10:9, 17:14, 21:3, 33:5, 37:15, 57:10, 101:5, 101:9, 103:5, 105:11, 105:24, 121:19, 163:15</p> <p>log [13] - 22:13, 25:12, 25:17, 27:10, 27:11, 38:4, 41:12, 88:13, 113:9, 131:12, 163:21, 167:4</p> <p>log-on [1] - 41:12</p> <p>logged [21] - 33:24, 34:1, 35:10, 40:16, 41:20, 42:4, 44:22, 46:7, 46:11, 55:3, 59:8, 59:15, 65:7, 65:12, 78:7, 127:7,</p>
K	L			
<p>Kansas [2] - 176:23, 200:22</p> <p>Kay [1] - 154:5</p> <p>keep [2] - 21:3, 118:23</p> <p>keeping [3] - 107:18, 112:23, 118:19</p> <p>kept [1] - 101:10</p> <p>key [2] - 152:23, 175:18</p> <p>kick [1] - 133:20</p> <p>kicked [1] - 161:2</p> <p>kicking [1] - 196:13</p> <p>kicks [1] - 114:1</p> <p>kids [1] - 30:20</p> <p>kind [12] - 18:18, 56:15, 56:16, 98:8, 107:12, 117:24, 121:8, 137:17, 146:8, 165:9, 174:4</p> <p>kinds [5] - 120:15, 129:4, 157:19, 157:24, 170:7</p> <p>Kinky [1] - 30:15</p> <p>knock [1] - 189:2</p> <p>knocked [3] - 189:5, 189:15, 189:24</p> <p>knocking [4] - 190:1,</p>	<p>Lab [2] - 101:14, 101:16</p> <p>labeled [2] - 11:8, 30:15</p> <p>lack [2] - 38:12, 114:6</p> <p>laid [2] - 10:5, 177:25</p> <p>language [6] - 31:2, 31:3, 31:6, 50:25, 115:9, 167:1</p> <p>laptop [13] - 4:13, 17:16, 17:18, 33:22, 33:24, 34:14, 35:9, 44:7, 44:15, 54:21, 54:23, 54:25, 55:3</p> <p>large [2] - 118:7, 187:6</p> <p>larger [1] - 73:11</p> <p>largest [1] - 101:19</p> <p>last [12] - 6:11, 14:7, 31:10, 56:24, 71:8, 71:10, 97:18, 126:10, 126:12, 153:24, 168:17, 171:12</p> <p>lastly [1] - 202:7</p> <p>latest [1] - 120:17</p>			

<p>138:20, 148:5, 167:10, 167:23, 202:19</p> <p>logging [6] - 27:13, 38:18, 57:10, 58:24, 59:9, 202:22</p> <p>login [2] - 24:23, 169:3</p> <p>logo [23] - 22:19, 22:21, 25:4, 34:12, 34:16, 34:23, 34:25, 35:4, 35:7, 35:11, 35:12, 35:22, 35:23, 35:25, 36:4, 55:6, 55:8, 55:9, 55:12, 56:12, 56:16</p> <p>logs [5] - 37:22, 59:20, 59:23, 85:22, 195:3</p> <p>look [17] - 20:19, 48:11, 54:1, 84:23, 108:21, 108:25, 111:23, 114:4, 127:22, 145:1, 152:7, 166:17, 174:5, 183:25, 184:25, 185:20, 203:6</p> <p>looked [4] - 127:13, 148:15, 169:11, 183:3</p> <p>looking [12] - 20:21, 22:8, 28:14, 29:20, 34:8, 84:6, 117:20, 129:20, 130:7, 130:8, 175:6, 180:14</p> <p>looks [4] - 18:24, 26:23, 73:8, 150:5</p> <p>lose [2] - 165:14, 166:11</p> <p>losing [1] - 173:12</p> <p>loss [1] - 178:3</p> <p>lost [2] - 173:6, 184:15</p> <p>love [1] - 30:20</p> <p>loved [1] - 126:5</p> <p>loves [1] - 102:4</p> <p>low [1] - 92:19</p> <p>low-level [1] - 92:19</p> <p>lucky [2] - 152:7, 152:12</p>	<p>Mac [1] - 113:11</p> <p>machine [2] - 1:22, 128:6</p> <p>Madison [1] - 98:12</p> <p>Magana [1] - 176:24</p> <p>Magistrate [2] - 11:1, 116:10</p> <p>magistrate [50] - 8:17, 9:1, 10:6, 10:11, 10:15, 11:13, 12:6, 12:7, 12:11, 13:1, 13:7, 36:8, 38:14, 80:4, 80:23, 82:11, 82:17, 82:19, 82:25, 83:2, 83:9, 83:12, 83:19, 116:3, 119:8, 144:14, 145:10, 145:18, 146:9, 146:20, 175:11, 175:23, 176:10, 177:19, 178:4, 178:23, 179:13, 180:24, 181:5, 182:21, 182:24, 183:8, 183:9, 184:12, 186:23, 187:15, 188:2, 191:14, 199:3, 201:12</p> <p>magnitude [1] - 72:20</p> <p>magnitudes [2] - 72:17, 78:8</p> <p>Mail [4] - 122:21, 122:24, 169:2, 169:5</p> <p>mail [9] - 26:18, 26:20, 26:22, 26:23, 119:25, 122:21, 122:22, 200:25, 201:3</p> <p>main [4] - 135:9, 135:12, 135:20, 163:9</p> <p>maintain [1] - 10:12</p> <p>maintained [1] - 8:7</p> <p>Major [1] - 14:13</p> <p>major [1] - 15:6</p> <p>majority [4] - 17:25, 31:8, 59:18, 176:5</p> <p>malfunctions [1] - 166:23</p> <p>malicious [7] - 39:5, 39:10, 39:15, 39:18, 39:19, 39:22, 166:14</p> <p>malware [16] - 8:21, 9:3, 9:5, 9:7, 9:13, 10:16, 12:25, 38:24, 39:4, 39:8, 39:18, 109:11, 109:13, 114:13, 189:8</p> <p>man [1] - 157:17</p>	<p>managed [1] - 76:5</p> <p>Management [2] - 106:24, 171:12</p> <p>management [1] - 8:5</p> <p>mandated [1] - 164:18</p> <p>manner [14] - 7:21, 8:11, 17:3, 34:21, 39:24, 71:18, 84:19, 94:9, 94:18, 123:7, 150:25, 152:13, 201:8</p> <p>manually [1] - 19:22</p> <p>Manuel [1] - 1:18</p> <p>March [2] - 40:18, 42:3</p> <p>margin [1] - 156:14</p> <p>marked [4] - 20:18, 110:25, 127:20, 130:21</p> <p>market [1] - 121:6</p> <p>Maryland [10] - 14:14, 14:21, 15:5, 153:3, 153:11, 154:4, 170:11, 201:1, 201:5, 201:13</p> <p>mask [3] - 101:4, 175:1, 178:17</p> <p>masked [1] - 9:21</p> <p>mass [1] - 196:17</p> <p>Massachusetts [2] - 98:22, 157:1</p> <p>master's [1] - 98:12</p> <p>material [17] - 23:13, 23:18, 23:25, 24:1, 24:4, 24:5, 24:7, 24:11, 27:19, 30:8, 35:13, 46:17, 54:4, 55:23, 68:18, 86:15</p> <p>materials [1] - 100:1</p> <p>matter [25] - 4:1, 4:7, 4:15, 39:1, 44:21, 53:21, 54:2, 54:5, 64:10, 67:15, 83:21, 85:17, 86:20, 88:21, 94:22, 95:3, 139:7, 143:2, 173:8, 176:6, 177:7, 195:8, 196:22, 197:17, 205:9</p> <p>matter's [1] - 68:8</p> <p>matters [6] - 15:1, 15:17, 15:19, 196:23, 197:18, 197:19</p> <p>mean [36] - 22:25, 29:7, 30:2, 52:14, 52:16, 60:10, 76:13, 77:18, 78:13, 79:18, 89:8, 101:13, 103:10, 116:19, 119:12, 137:21,</p>	<p>155:15, 157:19, 164:17, 165:2, 165:6, 165:12, 168:5, 168:8, 169:8, 169:10, 171:4, 178:11, 187:4, 188:15, 189:25, 192:4, 192:17, 194:3, 195:22, 199:10</p> <p>meaning [7] - 39:11, 39:19, 77:11, 186:2, 186:14, 200:8, 201:25</p> <p>means [11] - 33:1, 43:19, 52:1, 52:3, 52:7, 75:25, 109:19, 137:12, 155:2, 175:25, 178:21</p> <p>meant [2] - 49:15, 103:20</p> <p>measure [1] - 74:24</p> <p>meat [1] - 107:19</p> <p>mechanism [4] - 59:24, 62:2, 62:3, 193:14</p> <p>media [4] - 68:2, 68:12, 69:3, 69:12</p> <p>meet [1] - 159:11</p> <p>meeting [1] - 159:24</p> <p>meets [1] - 203:8</p> <p>Mellon [1] - 116:17</p> <p>member [1] - 95:22</p> <p>members [7] - 36:21, 37:7, 68:17, 69:22, 73:6, 79:14, 95:12</p> <p>mention [1] - 62:5</p> <p>mentioned [5] - 6:10, 55:13, 71:24, 117:3, 202:3</p> <p>merely [2] - 46:7, 148:15</p> <p>mess [1] - 150:23</p> <p>message [3] - 26:10, 27:15, 46:1</p> <p>messages [1] - 131:14</p> <p>messed [1] - 170:6</p> <p>messaging [1] - 172:5</p> <p>met [6] - 6:9, 64:6, 65:8, 66:2, 161:13, 177:25</p> <p>method [5] - 23:21, 37:17, 114:7, 152:15, 159:8</p> <p>methodology [4] - 89:9, 146:7, 146:8</p> <p>methods [1] - 152:15</p> <p>Michaud [7] - 98:24, 99:14, 162:21, 167:19, 167:20,</p>	<p>188:1, 192:9</p> <p>Microsoft [5] - 120:18, 120:20, 121:4, 124:1, 124:2</p> <p>midnight [1] - 108:18</p> <p>might [18] - 6:24, 8:9, 10:1, 50:4, 76:14, 78:19, 79:12, 100:22, 109:7, 117:14, 117:15, 120:8, 137:17, 138:21, 163:19, 177:12, 187:17, 188:16</p> <p>million [2] - 108:16, 160:14</p> <p>millions [6] - 54:2, 106:12, 107:3, 115:17, 123:16, 124:11</p> <p>mind [2] - 13:14, 108:14</p> <p>minute [1] - 6:23</p> <p>minutes [7] - 53:22, 54:2, 54:5, 70:1, 88:10, 93:17, 174:19</p> <p>mirror [1] - 21:20</p> <p>mischaracterizes [1] - 102:13</p> <p>mischaracterizing [1] - 165:16</p> <p>miscommunication [1] - 147:24</p> <p>misconduct [1] - 181:10</p> <p>misconfiguration [4] - 53:14, 103:14, 164:14, 164:17</p> <p>misconfigured [2] - 103:3, 103:17</p> <p>mislead [1] - 36:7</p> <p>misled [3] - 179:13, 184:12, 184:18</p> <p>misrepresentation [1] - 144:23</p> <p>misrepresentations [1] - 144:20</p> <p>misrepresenting [2] - 118:18, 145:12</p> <p>miss [2] - 109:1</p> <p>missing [2] - 114:21, 115:8</p> <p>mistake [1] - 147:6</p> <p>mistaken [3] - 146:25, 147:18</p> <p>mistakes [8] - 106:9, 106:10, 106:15, 106:16, 108:1, 108:4, 109:1</p> <p>mixing [1] - 190:13</p>
M				
<p>M-a-g-a-n-a [1] - 176:24</p> <p>MAC [16] - 41:11, 44:3, 44:5, 44:10, 44:11, 44:14, 63:3, 84:16, 96:1, 110:1, 113:4, 113:5, 127:5, 128:16, 130:9, 148:2</p>				

mode [1] - 69:13
modem [4] - 43:2,
 43:23, 47:1, 141:2
moderators [1] -
 46:15
modified [4] - 100:13,
 100:14, 149:16,
 150:19
modifies [1] - 129:10
moment [1] - 108:18
money [3] - 155:16,
 155:18
monitor [3] - 20:19,
 26:5, 188:11
monitored [3] - 72:1,
 72:8, 88:9
month [1] - 99:22
months [7] - 15:13,
 42:2, 95:14, 124:2,
 159:21, 161:1,
 180:13
Moreno [1] - 176:24
Moreno-Magana [1] -
 176:24
morning [1] - 81:1
most [13] - 10:7,
 19:23, 27:21, 33:22,
 67:1, 89:5, 105:9,
 121:3, 121:4,
 139:18, 141:14,
 182:4, 195:24
mostly [1] - 38:25
Motion [1] - 2:8
MOTION [2] - 1:9, 2:1
motion [27] - 4:17,
 4:21, 4:24, 5:1, 5:3,
 5:4, 5:9, 8:25, 11:22,
 12:2, 13:5, 49:17,
 50:5, 76:17, 91:12,
 111:1, 137:15,
 137:19, 147:20,
 167:21, 179:15,
 180:19, 183:17,
 198:2, 203:17
motions [3] - 4:17,
 8:14, 174:15
motivation [1] - 10:1
Mountain [1] - 1:24
move [13] - 52:11,
 54:12, 56:18, 57:20,
 67:6, 128:21,
 132:17, 147:9,
 151:23, 155:6,
 158:4, 168:7, 168:11
moved [4] - 36:23,
 57:18, 188:25, 191:6
movement [1] - 188:5
Mozilla [2] - 108:24,
 123:13
MR [144] - 1:13, 5:14,

6:2, 13:16, 13:23,
 14:5, 22:1, 22:3,
 25:7, 25:9, 27:5,
 27:7, 31:13, 31:16,
 49:14, 50:3, 50:6,
 50:13, 50:16, 50:18,
 51:3, 52:10, 52:13,
 52:17, 52:22, 56:13,
 56:22, 56:24, 64:17,
 64:20, 65:23, 66:20,
 66:23, 67:10, 67:12,
 67:15, 67:20, 67:23,
 68:22, 69:5, 69:9,
 69:16, 70:2, 71:4,
 71:19, 71:21, 76:24,
 78:24, 79:19, 80:6,
 80:11, 80:14, 90:25,
 91:2, 91:5, 91:11,
 91:13, 93:4, 93:6,
 93:22, 93:25, 94:3,
 96:17, 96:20, 96:22,
 97:1, 97:4, 97:12,
 97:16, 102:12,
 111:16, 111:19,
 112:2, 118:11,
 118:12, 119:1,
 119:19, 119:23,
 126:20, 127:17,
 128:21, 128:24,
 128:25, 130:18,
 132:17, 132:19,
 133:2, 133:12,
 133:16, 133:17,
 133:20, 137:13,
 138:1, 141:19,
 144:11, 146:25,
 147:17, 151:25,
 152:3, 152:5,
 153:13, 153:16,
 154:9, 155:8,
 159:25, 160:1,
 168:7, 168:11,
 169:16, 169:18,
 169:20, 173:11,
 173:14, 174:6,
 174:8, 174:13,
 174:20, 174:22,
 174:24, 183:2,
 183:12, 183:14,
 183:16, 184:2,
 184:17, 185:12,
 185:19, 187:1,
 187:19, 187:24,
 189:13, 189:20,
 190:9, 190:16,
 191:2, 191:12,
 192:7, 192:22,
 193:5, 194:2, 194:8,
 194:16, 198:13,
 198:20
multimedia [1] -

100:19
multipage [1] - 202:14
multiple [13] - 11:22,
 23:4, 23:16, 28:17,
 43:16, 43:20, 52:5,
 65:15, 73:14, 90:13,
 138:4, 141:10,
 172:24
murder [1] - 174:4
must [2] - 175:25,
 180:21
muted [1] - 7:9

N

name [22] - 6:10,
 10:21, 14:6, 14:7,
 41:12, 48:4, 50:19,
 74:13, 89:13, 97:17,
 97:18, 97:19, 113:9,
 117:16, 120:25,
 148:4, 151:9, 152:9,
 152:10, 153:25,
 163:22
name/no [1] - 87:24
names [5] - 27:18,
 29:3, 81:5, 117:21,
 134:9
Naples [4] - 33:15,
 33:20, 80:22, 81:6
narrow [4] - 48:7,
 48:15, 86:1, 182:8
narrowly [1] - 181:5
national [4] - 6:11,
 15:1, 15:2, 69:23
nature [15] - 15:3,
 36:16, 38:17, 57:8,
 57:11, 64:21, 72:22,
 74:1, 102:9, 118:24,
 120:6, 162:17,
 180:5, 195:9
Naval [2] - 101:14,
 101:16
naval [1] - 101:23
navigate [2] - 38:6,
 46:16
Navy [3] - 9:25,
 101:22, 101:25
nearby [1] - 126:4
nearly [2] - 102:14,
 102:22
Nebraska [4] - 118:9,
 120:13, 121:20,
 121:21
necessarily [3] - 30:4,
 87:2, 163:12
necessary [8] - 9:14,
 10:8, 37:11, 76:16,
 81:14, 153:21,
 175:9, 181:8

necessitated [1] -
 179:7
necessity [1] - 49:22
need [20] - 17:4,
 18:22, 19:10, 42:19,
 49:11, 49:24, 67:14,
 75:17, 77:4, 81:4,
 92:20, 102:1, 146:3,
 165:9, 165:10,
 170:17, 170:18,
 199:24
needed [3] - 96:9,
 125:10, 196:5
needs [5] - 68:25,
 124:12, 136:6,
 147:19, 178:20
nefarious [1] - 139:11
negate [1] - 198:17
negative [1] - 68:13
negligent [1] - 181:10
nerds [3] - 128:3,
 134:4
net [1] - 150:24
network [64] - 8:20,
 15:22, 16:2, 16:3,
 16:8, 16:14, 16:21,
 16:24, 18:15, 18:24,
 19:1, 19:4, 19:15,
 36:17, 37:2, 43:18,
 44:2, 44:6, 44:7,
 44:9, 46:24, 57:11,
 63:9, 63:10, 63:14,
 70:13, 70:23, 72:24,
 85:24, 90:13, 92:2,
 92:8, 100:4, 100:7,
 100:10, 100:16,
 100:24, 101:2,
 102:4, 102:7, 102:9,
 103:25, 107:2,
 113:7, 119:13,
 131:1, 131:7,
 136:17, 138:11,
 138:17, 140:15,
 140:19, 141:6,
 142:11, 143:16,
 145:4, 149:23,
 163:21, 169:25,
 170:9, 170:13,
 171:10, 178:17
neutral [2] - 176:9,
 177:19
never [6] - 110:20,
 136:21, 139:9,
 141:21, 192:5, 202:1
nevertheless [1] - 7:5
New [5] - 14:19, 14:23,
 14:24, 98:22, 115:7
new [11] - 21:8, 22:15,
 25:21, 25:22, 26:9,
 35:3, 35:11, 35:12,

65:11, 126:11,
 199:23
news [3] - 115:4,
 163:17, 163:18
next [14] - 4:1, 22:21,
 31:1, 33:9, 48:6,
 99:22, 108:17,
 109:3, 109:20,
 131:16, 171:19,
 180:12, 186:12,
 192:16
nexus [1] - 146:2
nice [1] - 161:13
Ninth [1] - 98:21
NIT [283] - 3:15, 5:16,
 8:19, 35:18, 35:22,
 35:23, 37:3, 37:4,
 37:9, 37:11, 37:16,
 37:19, 37:21, 38:3,
 38:13, 38:16, 38:24,
 39:3, 39:7, 39:9,
 39:17, 40:6, 40:12,
 41:5, 41:6, 41:8,
 42:14, 44:20, 45:4,
 45:7, 45:23, 45:25,
 46:4, 46:6, 46:11,
 46:25, 47:3, 47:19,
 47:20, 47:22, 48:13,
 48:14, 48:19, 51:14,
 55:13, 55:16, 55:19,
 56:9, 57:3, 57:14,
 59:3, 59:4, 59:7,
 59:10, 59:16, 59:19,
 59:24, 60:1, 60:6,
 60:12, 60:13, 60:14,
 60:21, 61:2, 61:3,
 61:4, 61:5, 61:7,
 61:25, 62:2, 62:4,
 62:5, 62:8, 62:10,
 62:16, 62:19, 63:1,
 63:2, 63:19, 63:21,
 64:5, 64:16, 64:22,
 65:4, 65:6, 65:20,
 65:22, 66:3, 66:10,
 67:8, 71:11, 72:11,
 74:9, 80:2, 80:23,
 81:1, 81:16, 81:19,
 82:2, 82:9, 83:5,
 83:16, 84:4, 84:19,
 85:8, 85:9, 85:13,
 86:2, 86:4, 86:7,
 86:8, 86:16, 86:18,
 86:21, 87:8, 88:9,
 88:11, 88:15, 88:17,
 88:20, 89:2, 89:18,
 89:24, 90:17, 91:25,
 92:7, 92:11, 92:13,
 92:17, 92:24, 92:25,
 93:3, 93:9, 93:13,
 94:6, 94:8, 94:13,

94:15, 95:5, 95:11,
95:17, 95:19, 96:11,
99:16, 99:17, 100:3,
103:25, 104:2,
104:5, 104:6, 104:7,
104:21, 104:22,
105:5, 105:19,
109:3, 109:11,
109:15, 109:17,
109:20, 109:24,
109:25, 110:8,
110:10, 110:14,
110:19, 110:22,
110:24, 111:2,
111:6, 111:11,
111:12, 112:11,
112:16, 112:17,
112:24, 113:2,
113:3, 113:18,
113:20, 113:21,
113:22, 113:24,
114:10, 115:19,
116:1, 116:4, 116:7,
116:12, 116:21,
117:1, 117:14,
118:7, 119:17,
120:5, 121:15,
121:23, 122:6,
122:25, 125:3,
125:7, 125:24,
126:23, 127:3,
127:8, 127:14,
129:18, 129:21,
130:14, 130:16,
131:10, 132:3,
134:12, 134:16,
134:25, 135:2,
135:4, 135:20,
135:22, 136:4,
136:5, 136:18,
136:19, 136:20,
137:19, 137:24,
139:8, 139:17,
139:25, 140:12,
141:1, 143:5, 143:9,
144:1, 144:13,
144:22, 146:1,
146:11, 147:2,
147:12, 147:20,
148:1, 148:2,
148:10, 148:12,
148:16, 149:19,
150:1, 152:14,
164:5, 165:1, 165:6,
167:7, 168:2,
168:20, 168:23,
169:2, 169:12,
171:8, 171:20,
171:25, 172:18,
173:6, 173:17,
176:7, 182:14,

184:7, 187:3, 190:4,
191:7, 192:14,
192:18, 193:8,
200:23, 202:17,
202:19
NIT-infected [1] -
135:22
NITs [11] - 99:12,
99:23, 104:3,
104:11, 104:15,
104:17, 113:19,
119:2, 124:8,
165:25, 197:11
NN [1] - 29:16
NO [3] - 1:5, 3:4, 3:11
no-fly [1] - 158:22
nobody [2] - 178:25,
182:1
none [1] - 177:22
nonfictional [1] -
31:12
nonnude [1] - 29:17
normal [4] - 16:13,
53:12, 83:3, 100:18
normally [5] - 17:4,
103:4, 105:12,
107:16, 109:24
North [14] - 7:25, 33:8,
34:5, 36:11, 36:12,
57:17, 57:20, 57:22,
58:9, 58:21, 187:5,
188:18, 188:25,
193:3
Northern [1] - 201:2
notable [3] - 121:17,
122:17, 129:4
note [3] - 7:3, 171:23,
173:4
notebook [2] - 13:24
noted [1] - 39:2
notes [1] - 69:24
nothing [13] - 12:16,
77:19, 87:11, 87:14,
93:6, 101:16,
108:25, 114:2,
121:5, 137:14,
182:3, 193:2, 201:24
notice [3] - 35:7,
56:17, 200:15
notified [1] - 56:11
notion [1] - 12:3
nowadays [1] - 162:12
nuclear [2] - 123:20,
123:22
nude [1] - 22:21
nullifying [1] - 144:23
number [56] - 4:3,
15:15, 19:16, 40:15,
42:18, 46:8, 47:24,
48:13, 65:12, 66:10,

66:12, 67:2, 67:4,
68:20, 71:13, 71:25,
73:4, 73:13, 74:20,
74:21, 74:22, 75:1,
75:2, 75:5, 75:11,
75:16, 75:18, 75:21,
76:10, 76:18, 77:8,
79:1, 87:18, 87:22,
87:24, 88:4, 88:9,
94:7, 94:24, 95:6,
95:7, 98:18, 98:20,
101:20, 112:22,
113:2, 113:6,
122:15, 122:23,
134:9, 135:9,
135:13, 135:20,
142:19
numbering [1] - 89:9
numbers [5] - 64:9,
75:10, 118:8, 196:9,
196:14
numerous [3] - 18:9,
83:24, 111:21

O

oath [1] - 94:1
object [5] - 56:13,
67:13, 71:19,
111:16, 137:13
objecting [2] - 68:11,
192:21
objection [20] - 22:3,
25:9, 27:7, 31:16,
56:20, 64:17, 65:24,
77:18, 78:11, 78:22,
91:11, 102:12,
112:3, 119:6,
128:25, 132:19,
137:25, 143:22,
159:25, 173:11
objective [2] - 88:1,
146:2
objectively [1] -
180:23
observe [1] - 35:12
observed [3] - 18:11,
55:3, 61:16
observer [1] - 24:2
obstructive [1] - 67:24
obtain [7] - 10:8,
10:21, 85:13, 89:3,
149:19, 150:1, 179:9
obtained [6] - 11:2,
24:2, 150:3, 173:20,
177:18, 198:10
obviously [11] - 7:1,
12:10, 60:25, 72:25,
87:18, 101:13,
145:11, 183:4,

184:19, 184:23,
203:6
occasions [1] - 68:25
occur [4] - 59:12,
87:3, 189:14, 189:22
occurred [9] - 34:23,
56:1, 56:4, 59:11,
80:22, 177:4,
177:12, 189:18,
198:24
occurring [1] - 174:25
occurs [2] - 86:11,
87:6
OF [4] - 1:1, 1:3, 1:9,
205:1
offer [1] - 98:5
OFFERED [2] - 3:4,
3:11
offers [2] - 154:6,
163:20
office [8] - 51:15,
55:24, 126:5, 144:7,
149:14, 156:12,
160:5, 160:10
Office [8] - 1:13, 1:18,
8:16, 106:24,
120:19, 120:20,
121:4, 171:12
officer [4] - 39:14,
81:3, 81:5, 185:21
officers [1] - 79:21
offices [1] - 45:21
Official [3] - 1:24,
205:3, 205:17
OFFICIAL [1] - 205:1
officials [5] - 159:11,
161:10, 168:17,
168:24, 169:1
offline [1] - 72:25
often [1] - 21:3
old [5] - 107:3, 121:10,
121:12, 122:13,
122:14
omitted [1] - 186:6
once [28] - 27:10,
31:20, 32:6, 32:14,
36:22, 45:7, 45:12,
58:6, 58:22, 60:12,
121:13, 136:9,
139:13, 139:15,
139:23, 140:18,
148:20, 148:25,
150:16, 150:17,
151:12, 151:14,
172:1, 188:12,
191:4, 191:7, 191:16
One [1] - 4:10
one [83] - 6:14, 12:2,
17:17, 20:9, 21:19,
23:16, 23:24, 25:12,

25:14, 27:21, 29:1,
32:9, 38:11, 40:11,
43:2, 43:10, 43:13,
43:24, 52:20, 64:10,
68:20, 71:4, 72:3,
74:8, 75:10, 82:12,
93:4, 93:23, 99:22,
100:25, 103:4,
103:23, 105:8,
106:2, 107:8, 108:8,
109:12, 112:16,
117:16, 117:17,
118:12, 118:14,
119:6, 119:16,
120:12, 121:25,
122:19, 123:7,
124:15, 125:13,
127:14, 132:23,
134:1, 137:10,
138:3, 138:13,
139:6, 139:19,
141:25, 143:14,
150:22, 160:7,
160:14, 163:19,
164:17, 167:20,
170:2, 170:20,
171:19, 172:5,
175:18, 179:22,
189:5, 190:24,
193:24, 195:24,
196:2, 197:14,
199:23
ones [2] - 109:18,
126:5
ongoing [4] - 71:13,
72:14, 73:23, 74:1
Onion [1] - 9:15
online [11] - 25:1,
36:25, 37:5, 58:12,
69:25, 88:25, 122:7,
123:11, 162:23,
163:1, 172:25
onwards [1] - 137:4
op [1] - 161:23
open [15] - 38:11,
46:4, 60:24, 61:1,
61:3, 61:8, 61:9,
86:7, 125:18,
133:21, 136:12,
165:10, 172:6,
189:7, 195:2
opened [7] - 45:1,
84:12, 86:3, 86:5,
115:5, 131:1, 140:3
opening [2] - 38:9,
38:11
operate [3] - 16:25,
18:16, 18:21
operated [4] - 9:14,
70:13, 110:20,

<p>144:13 operates [1] - 9:18 operating [12] - 32:18, 41:13, 63:4, 84:17, 110:1, 113:10, 127:6, 129:6, 129:12, 130:10, 148:3, 181:21 Operation [5] - 118:9, 120:12, 121:9, 121:17, 172:20 operation [15] - 37:8, 65:21, 75:22, 95:9, 95:13, 95:18, 105:1, 117:15, 117:18, 117:25, 118:10, 122:1, 122:4, 124:22, 172:21 operational [5] - 58:14, 58:15, 58:16, 58:18, 58:22 operations [5] - 118:6, 120:9, 120:11, 167:7, 171:20 operator [2] - 17:10, 33:12 operators [2] - 17:13, 17:24 opinion [11] - 20:11, 38:25, 39:3, 39:13, 39:19, 74:2, 102:11, 102:19, 102:22, 102:25, 150:9 opinions [1] - 180:3 opportunity [4] - 22:13, 50:1, 54:15, 153:20 oppose [1] - 50:5 opposed [3] - 36:1, 82:19, 182:24 option [2] - 23:23, 132:8 options [1] - 103:16 order [18] - 19:9, 19:12, 26:16, 38:3, 39:15, 45:18, 68:5, 68:19, 69:16, 72:19, 74:7, 78:8, 95:4, 100:21, 102:5, 145:13, 173:16, 173:18 orders [4] - 71:14, 72:15, 72:17, 73:22 organization [4] - 43:16, 43:17, 63:24, 79:14 organizations [4] - 106:23, 115:4, 136:2, 143:19 organized [1] - 99:20</p>	<p>originally [1] - 134:16 originates [1] - 92:16 otherwise [2] - 13:11, 116:14 ourselves [1] - 146:9 out-of-date [2] - 120:18, 122:13 outside [23] - 12:10, 24:1, 48:14, 62:14, 67:18, 69:4, 69:25, 76:6, 83:18, 95:15, 121:24, 135:19, 138:18, 176:18, 177:3, 181:3, 182:17, 186:14, 190:18, 191:14, 191:23, 201:14 overbroad [1] - 161:23 override [2] - 88:2, 88:3 overrule [3] - 56:19, 119:5, 137:25 overruled [3] - 64:24, 66:1, 112:3 own [9] - 26:24, 30:9, 51:10, 100:7, 136:10, 155:10, 159:5, 161:18, 186:15 owner [2] - 17:10, 33:12</p>	<p>panel [1] - 68:9 panels [1] - 160:7 paper [2] - 31:14, 140:1 paper-clipped [1] - 31:14 paperwork [1] - 8:19 par [1] - 88:5 paragraph [3] - 111:10, 168:9, 183:25 paragraphs [4] - 111:5, 111:10, 111:23, 112:4 parallel [2] - 125:22, 125:23 paraphernalia [1] - 11:3 parcel [1] - 131:22 pardon [1] - 127:7 Parker [1] - 1:14 parliament [1] - 99:4 part [10] - 15:22, 28:5, 48:1, 76:9, 82:5, 102:18, 119:16, 158:5, 158:19, 159:22 participate [2] - 6:18, 18:1 participated [2] - 54:6, 54:9 particular [20] - 6:20, 32:10, 44:6, 46:1, 47:13, 74:9, 79:15, 89:7, 89:12, 90:2, 93:12, 99:24, 107:14, 135:5, 135:8, 170:12, 175:6, 175:10, 182:23 particularity [3] - 176:9, 177:24, 180:25 particularly [3] - 117:25, 124:10, 149:2 parties [2] - 68:6, 101:10 parties' [1] - 8:14 party [8] - 5:7, 159:18, 195:5, 195:7, 196:3, 196:11, 196:17, 196:23 passed [3] - 84:12, 137:4, 172:2 passes [4] - 158:13, 159:2, 159:4, 159:5 passionate [3] - 156:8, 156:13, 157:15</p>	<p>passive [1] - 46:2 password [7] - 9:4, 24:3, 25:16, 37:23, 38:5, 85:15, 85:19 past [2] - 107:6, 187:9 patched [1] - 124:2 path [1] - 135:3 pause [6] - 13:18, 97:6, 107:9, 109:9, 117:13, 120:14 pay [1] - 121:6 paying [1] - 98:6 peace [2] - 22:24, 24:18 Peeing [1] - 30:16 peer [2] - 180:2 peer-to-peer [1] - 180:2 pen [2] - 195:4, 196:10 penalty [1] - 157:18 pending [1] - 68:8 penetrative [2] - 27:25, 45:3 penis [1] - 29:10 people [90] - 5:10, 10:1, 30:6, 31:5, 32:23, 43:12, 57:10, 58:23, 66:21, 73:11, 73:12, 75:15, 75:16, 78:6, 78:17, 88:2, 101:15, 102:2, 102:7, 104:16, 105:20, 106:1, 106:8, 106:13, 108:17, 108:25, 112:6, 114:24, 115:11, 115:15, 115:16, 115:17, 116:2, 116:6, 116:23, 117:1, 117:21, 117:22, 118:8, 120:16, 120:19, 120:24, 121:6, 121:11, 121:13, 122:5, 122:12, 122:14, 122:23, 123:8, 123:13, 123:16, 124:11, 124:17, 126:4, 126:7, 139:18, 155:18, 155:21, 158:3, 158:21, 159:5, 161:13, 161:14, 162:9, 163:6, 163:9, 163:12, 163:14, 163:18, 163:19, 163:23, 163:25, 164:1, 164:2, 166:12, 166:13,</p>	<p>166:22, 167:4, 167:6, 167:9, 167:23, 169:4, 169:5, 169:7, 172:24, 176:19, 180:15, 197:20, 203:20 people's [1] - 124:3 per [2] - 88:12, 198:22 percent [5] - 102:15, 106:19, 154:18, 154:19, 169:22 percentage [2] - 28:5, 64:13 perfect [10] - 106:11, 107:4, 108:1, 154:20, 162:9, 162:12, 162:13, 162:15, 170:22, 170:23 perfectly [2] - 127:13, 173:24 performed [1] - 45:23 perhaps [2] - 146:18, 190:13 perimeter [2] - 187:7, 187:9 period [18] - 8:8, 10:13, 24:22, 25:4, 32:21, 37:6, 40:18, 40:22, 40:23, 41:21, 41:22, 58:19, 72:1, 72:7, 78:5, 103:18, 103:20, 123:15 permissible [2] - 11:25, 39:24 permission [7] - 71:16, 74:4, 113:20, 113:22, 144:1, 146:10, 160:5 person [27] - 25:25, 33:13, 57:9, 78:14, 78:16, 79:22, 89:13, 112:23, 112:25, 114:3, 117:16, 117:17, 117:18, 124:15, 127:7, 129:8, 135:12, 148:5, 162:22, 174:1, 185:23, 188:5, 191:7, 195:2, 197:3, 197:23, 203:11 PERSON [2] - 133:18, 133:22 personal [4] - 39:3, 74:2, 97:25, 196:6 personally [2] - 38:25, 83:14 Personnel [1] - 106:24</p>	
P					
	<p>p.m [4] - 1:10, 93:19, 204:1 packets [4] - 131:22, 132:1, 144:6, 164:8 Page [7] - 2:2, 2:12, 2:18, 3:6, 3:7, 112:9, 183:23 page [35] - 22:11, 22:15, 24:23, 25:3, 25:23, 26:6, 27:2, 27:14, 27:16, 28:16, 28:18, 28:20, 29:2, 29:17, 30:1, 31:1, 31:9, 32:1, 34:9, 34:12, 44:24, 54:24, 55:1, 55:2, 55:6, 55:7, 55:8, 87:9, 93:12, 93:13, 121:22, 169:3, 203:6, 205:9 Pages [2] - 3:8, 111:3 pages [5] - 31:15, 54:1, 70:22, 106:3, 181:13 paid [1] - 98:3 paint [1] - 12:15</p>				

<p>persons [3] - 8:9, 9:21, 12:9</p> <p>perspective [4] - 60:17, 81:12, 92:19</p> <p>persuaded [1] - 202:4</p> <p>persuasive [2] - 200:20, 201:17</p> <p>pertain [1] - 12:9</p> <p>pertained [1] - 6:15</p> <p>pertaining [1] - 7:20</p> <p>pertinent [1] - 142:15</p> <p>pets [1] - 30:20</p> <p>Ph.D [3] - 97:13, 98:14, 158:6</p> <p>phone [18] - 42:17, 69:11, 69:12, 87:18, 87:21, 87:22, 87:23, 88:3, 88:8, 195:2, 195:3, 195:9, 196:9, 196:13, 199:7, 199:8</p> <p>Phone [1] - 1:20</p> <p>phones [2] - 43:20, 126:4</p> <p>phonetic [1] - 163:17</p> <p>physical [2] - 188:23, 190:23</p> <p>physically [3] - 47:18, 57:20, 190:6</p> <p>pick [1] - 88:8</p> <p>picked [1] - 190:23</p> <p>picture [3] - 13:3, 34:9, 156:18</p> <p>piece [8] - 41:24, 89:5, 106:14, 109:20, 123:20, 140:1, 146:12, 170:20</p> <p>pieces [8] - 89:17, 90:4, 90:7, 90:15, 90:16, 106:12, 112:15, 113:12</p> <p>pillars [1] - 177:16</p> <p>pin [1] - 119:24</p> <p>piped [1] - 7:8</p> <p>place [15] - 8:18, 9:2, 9:18, 10:1, 73:16, 79:15, 83:13, 86:22, 110:18, 111:25, 122:1, 150:6, 176:13, 188:10, 202:2</p> <p>placed [4] - 8:3, 23:24, 68:19, 69:17</p> <p>places [2] - 135:5, 163:24</p> <p>Plaintiff [1] - 1:4</p> <p>platform [1] - 9:22</p> <p>play [2] - 8:20, 123:17</p> <p>Playpen [134] - 7:16, 7:17, 7:25, 9:14, 18:4, 18:6, 18:7,</p>	<p>18:10, 18:14, 18:19, 18:20, 19:9, 19:11, 19:13, 20:12, 20:15, 20:22, 20:24, 21:3, 21:8, 21:16, 21:23, 21:24, 22:10, 22:12, 22:19, 22:21, 23:6, 23:8, 23:11, 24:8, 24:24, 24:25, 25:12, 25:13, 25:17, 25:24, 26:10, 26:16, 27:4, 27:11, 27:13, 27:15, 28:2, 29:4, 30:15, 30:18, 31:2, 31:7, 31:8, 31:11, 31:25, 32:14, 32:18, 33:6, 33:21, 33:25, 34:1, 35:10, 35:15, 36:13, 36:17, 36:21, 37:7, 37:13, 37:16, 37:23, 38:4, 38:7, 40:9, 41:20, 42:4, 44:22, 45:1, 45:19, 47:13, 50:25, 52:4, 53:4, 53:8, 53:11, 53:15, 53:16, 53:18, 54:11, 54:25, 57:17, 57:23, 58:3, 58:6, 60:3, 65:8, 65:9, 65:17, 66:7, 66:13, 67:1, 70:6, 70:7, 70:21, 70:24, 71:25, 72:7, 72:24, 73:4, 85:19, 85:21, 95:10, 95:12, 95:23, 102:10, 103:21, 105:1, 105:20, 106:2, 110:8, 112:18, 114:20, 115:8, 115:23, 116:23, 117:19, 121:9, 121:19, 152:8, 157:10, 165:1, 167:1, 167:3, 167:5, 167:10, 167:23, 175:2, 182:10</p> <p>playpen [1] - 161:23</p> <p>pleasure [3] - 5:19, 5:24, 6:5</p> <p>pledged [1] - 126:13</p> <p>plenty [1] - 161:9</p> <p>plus [1] - 4:9</p> <p>point [26] - 4:20, 8:12, 8:15, 11:1, 19:9, 37:24, 45:4, 49:12, 56:21, 59:2, 73:24, 75:15, 78:13, 79:20, 87:19, 126:22, 128:21, 137:1, 140:3, 147:19,</p>	<p>151:19, 176:22, 179:5, 188:25, 194:10, 200:18</p> <p>poisoned [2] - 125:6, 125:9</p> <p>police [1] - 181:9</p> <p>policy [4] - 126:11, 126:14, 126:15, 168:15</p> <p>poorly [1] - 46:19</p> <p>pop [2] - 47:19, 180:13</p> <p>pop-up [1] - 180:13</p> <p>popular [2] - 19:23, 27:21</p> <p>porn [9] - 20:10, 21:14, 23:6, 23:8, 70:22, 187:6, 187:11, 187:13, 188:19</p> <p>pornographic [1] - 175:5</p> <p>pornography [49] - 4:11, 4:14, 7:19, 7:20, 11:5, 11:18, 15:1, 15:9, 15:22, 17:22, 18:9, 18:13, 19:14, 19:24, 20:7, 23:3, 23:4, 23:11, 23:21, 23:24, 24:20, 26:13, 27:24, 28:7, 28:11, 29:11, 30:7, 30:18, 30:24, 31:4, 31:5, 32:4, 35:17, 38:1, 38:20, 41:1, 49:8, 51:9, 52:6, 53:1, 64:14, 88:22, 157:11, 188:24, 190:8, 190:12, 197:7, 202:25, 203:9</p> <p>portion [1] - 41:14</p> <p>posed [1] - 34:20</p> <p>posing [1] - 22:21</p> <p>position [4] - 71:23, 124:25, 146:9, 199:22</p> <p>positions [1] - 5:9</p> <p>positive [1] - 151:4</p> <p>positives [2] - 151:2, 151:3</p> <p>possessed [1] - 11:5</p> <p>possessing [1] - 4:13</p> <p>possession [1] - 28:7</p> <p>possibility [1] - 20:12</p> <p>possible [10] - 52:24, 68:9, 79:5, 80:16, 106:15, 107:23, 115:21, 154:15, 177:8, 203:4</p> <p>possibly [3] - 68:5,</p>	<p>78:9, 78:10</p> <p>Post [3] - 122:20, 168:23, 168:25</p> <p>post [29] - 20:22, 20:23, 21:1, 21:8, 21:22, 23:8, 24:7, 24:10, 24:12, 24:13, 24:14, 35:2, 38:12, 45:1, 46:4, 51:24, 52:1, 52:3, 52:14, 86:5, 86:7, 86:15, 86:16, 86:17, 87:7, 156:23, 161:22, 162:1, 169:3</p> <p>post-login [1] - 169:3</p> <p>posts [9] - 32:2, 32:5, 32:9, 38:11, 40:25, 42:5, 42:12, 51:19, 52:25</p> <p>Posts [1] - 3:5</p> <p>potential [1] - 68:16</p> <p>potentially [2] - 90:12, 186:14</p> <p>Potpourri [2] - 30:2, 30:3</p> <p>powerful [1] - 121:2</p> <p>powers [1] - 12:5</p> <p>practical [1] - 154:6</p> <p>practice [2] - 115:6, 115:7</p> <p>precedence [1] - 178:11</p> <p>precedent [1] - 194:21</p> <p>precise [1] - 8:13</p> <p>predecessor [1] - 104:11</p> <p>preferred [4] - 22:23, 23:10, 23:21, 51:6</p> <p>prejudice [9] - 177:11, 178:14, 178:19, 178:24, 198:3, 198:4, 198:18, 198:21, 198:22</p> <p>prejudiced [1] - 198:1</p> <p>prejudicial [1] - 199:4</p> <p>prelog [1] - 55:2</p> <p>prelog-on [1] - 55:2</p> <p>premarked [4] - 22:7, 26:3, 28:14, 34:7</p> <p>premise [2] - 69:21, 176:23</p> <p>preparation [1] - 55:16</p> <p>prepare [3] - 13:23, 35:18, 180:16</p> <p>prepared [5] - 51:16, 55:20, 107:22, 197:3, 203:19</p> <p>preparing [1] - 55:17</p> <p>prepubescent [8] -</p>	<p>22:18, 27:24, 30:7, 34:18, 34:20, 35:25, 36:1, 45:2</p> <p>prescribe [1] - 189:21</p> <p>prescribed [2] - 186:3, 188:1</p> <p>present [10] - 6:24, 33:17, 35:5, 48:23, 79:15, 79:18, 143:7, 145:16, 150:9, 203:24</p> <p>presented [12] - 22:11, 25:3, 26:8, 27:14, 119:9, 137:18, 140:11, 145:9, 145:19, 147:13, 174:16, 179:13</p> <p>presenting [1] - 81:15</p> <p>Press [3] - 114:12, 115:2, 125:16</p> <p>presumably [1] - 39:24</p> <p>presumptively [1] - 177:3</p> <p>preteen [2] - 29:23, 29:25</p> <p>Preteen [5] - 27:22, 31:23, 31:24, 38:7, 44:25</p> <p>pretrial [1] - 4:17</p> <p>pretty [7] - 30:21, 34:23, 100:10, 113:5, 115:13, 124:18, 162:16</p> <p>prevent [6] - 74:1, 75:25, 87:21, 91:20, 91:21, 95:2</p> <p>preventing [1] - 126:4</p> <p>preview [5] - 22:24, 24:6, 24:11, 32:12, 85:4</p> <p>reviews [1] - 32:7</p> <p>previous [3] - 35:25, 95:22, 167:6</p> <p>previously [17] - 24:10, 25:15, 25:16, 25:17, 32:7, 37:4, 37:12, 41:7, 44:23, 46:9, 59:1, 94:23, 95:1, 130:21, 159:8, 177:16, 177:23</p> <p>primary [4] - 16:7, 18:12, 20:24, 39:4</p> <p>principal [2] - 6:3, 97:23</p> <p>principle [2] - 187:21, 189:10</p> <p>print [1] - 159:3</p> <p>printed [2] - 129:24,</p>
---	---	---	--	--

<p>130:13 prints [1] - 129:11 Privacy [1] - 97:24 privacy [18] - 152:11, 153:4, 154:12, 162:23, 162:25, 170:16, 170:17, 179:16, 179:19, 179:22, 180:2, 180:9, 193:25, 194:7, 194:9, 195:10, 195:11, 196:21 probable [13] - 37:24, 38:18, 146:4, 146:5, 176:9, 177:20, 177:21, 177:24, 180:24, 202:9, 202:20, 202:22, 202:24 problem [3] - 133:15, 171:5, 183:18 problems [2] - 161:15, 183:18 procedure [3] - 118:16, 175:15, 199:19 Procedure [2] - 12:4, 99:7 proceed [3] - 13:15, 56:23, 142:23 proceeded [1] - 10:12 proceeding [4] - 39:12, 39:17, 99:5, 99:10 proceedings [5] - 7:7, 73:13, 98:23, 204:1, 205:8 Proceedings [1] - 1:22 process [9] - 46:2, 77:10, 89:19, 109:4, 110:5, 119:10, 120:4, 178:19 processed [1] - 140:18 production [3] - 15:8, 28:7, 49:17 professionals [1] - 131:6 program [9] - 6:14, 6:15, 123:23, 129:11, 130:24, 131:13, 134:8, 134:14, 158:12 programmed [1] - 135:22 programming [2] - 120:5, 128:1 prohibition [1] - 52:24</p>	<p>Project [2] - 19:6, 108:24 project [3] - 97:24, 158:10, 158:12 projector [1] - 133:14 prompt [3] - 90:23, 96:19, 174:7 prong [1] - 178:14 proof [1] - 90:12 propensity [1] - 80:1 proper [4] - 13:12, 78:25, 87:17, 118:16 properly [2] - 29:2, 197:12 properties [1] - 143:13 property [8] - 12:9, 183:19, 185:3, 185:8, 185:23, 188:5, 188:13, 192:11 proposed [3] - 99:11, 175:25, 200:11 prosecution [1] - 103:23 protect [7] - 100:16, 100:21, 105:9, 105:11, 121:5, 162:22, 170:15 protected [1] - 195:24 protection [3] - 154:6, 171:21, 179:16 protections [1] - 194:18 protective [2] - 173:16, 173:18 protocols [1] - 145:21 prove [2] - 202:21, 203:10 provide [13] - 43:7, 74:25, 75:1, 89:19, 102:5, 105:15, 153:4, 154:12, 162:9, 163:13, 163:23, 172:21, 172:22 provided [20] - 23:18, 51:14, 63:8, 63:12, 74:13, 81:7, 100:5, 110:21, 131:2, 132:5, 132:6, 132:15, 132:16, 134:21, 141:5, 147:7, 164:7, 171:22, 173:18 provider [21] - 10:21, 42:21, 42:23, 42:25, 43:7, 43:24, 44:14, 47:15, 48:9, 48:11, 48:12, 48:16, 48:17, 74:13, 74:15, 89:10,</p>	<p>89:13, 89:20, 136:24, 140:22, 141:3 provides [4] - 17:12, 21:9, 88:18, 143:13 providing [1] - 166:20 proving [1] - 13:6 provision [1] - 177:15 Public [1] - 1:18 public [20] - 7:6, 69:23, 75:7, 104:7, 104:9, 104:10, 104:12, 119:12, 119:16, 126:10, 160:11, 161:17, 161:19, 161:20, 165:4, 166:10, 166:20, 168:15, 172:17, 195:19 publication [1] - 69:24 publicized [1] - 159:8 publicly [3] - 48:10, 71:18, 95:13 publish [1] - 124:21 published [9] - 98:19, 122:7, 123:1, 123:11, 123:25, 126:12, 160:9, 168:23, 172:25 pull [3] - 16:18, 28:22, 149:23 punch [2] - 87:21, 187:9 purport [1] - 27:23 purported [2] - 45:2, 128:12 purporting [1] - 125:17 purpose [9] - 7:18, 18:12, 20:16, 89:2, 100:11, 105:10, 109:25, 175:2, 179:11 purposes [14] - 4:8, 20:6, 22:8, 51:12, 51:13, 78:20, 90:14, 163:4, 163:5, 163:7, 164:1, 164:3, 166:14, 182:15 pursuant [1] - 205:6 purview [1] - 67:17 put [33] - 6:8, 35:3, 37:5, 37:22, 43:6, 45:14, 56:17, 59:19, 81:20, 119:24, 123:14, 129:5, 129:24, 131:24, 133:14, 134:1, 140:1, 141:23, 146:9, 148:5,</p>	<p>148:23, 149:5, 187:14, 190:7, 190:14, 190:17, 190:18, 191:4, 193:13, 193:15, 193:19, 200:15 puts [1] - 85:18 putting [3] - 36:24, 117:6, 196:18 puzzle [1] - 170:20</p> <p style="text-align: center;">Q</p> <p>Quantico [1] - 15:14 questioning [5] - 56:14, 56:25, 119:22, 147:3, 169:15 questions [12] - 49:10, 54:13, 57:2, 57:6, 72:10, 81:25, 91:2, 91:14, 142:23, 146:6, 147:11, 153:21 quibble [1] - 106:6 quick [1] - 91:15 quickly [4] - 86:14, 86:20, 86:23, 203:18 quite [3] - 68:15, 154:15, 177:6 quote [2] - 154:4, 154:11 quoted [3] - 153:12, 168:23, 168:25</p> <p style="text-align: center;">R</p> <p>radar [1] - 159:6 raise [2] - 97:7, 184:11 raised [3] - 94:22, 143:23, 175:18 ran [6] - 6:22, 110:18, 110:20, 110:22, 130:12, 150:5 rather [3] - 131:22, 163:15, 194:14 Re [6] - 116:8, 178:5, 197:13, 197:17, 197:20, 200:7 reach [2] - 138:18, 139:17 reached [5] - 136:11, 136:21, 138:25, 139:4, 143:19 reaches [1] - 149:11 react [1] - 73:7 read [16] - 5:5, 25:21, 26:1, 73:7, 104:12, 104:24, 111:5, 128:6, 168:10,</p>	<p>174:15, 184:20, 184:23, 185:5, 197:21 readable [3] - 132:2, 132:9, 173:10 readily [1] - 10:3 reading [1] - 102:25 ready [1] - 133:19 real [11] - 26:20, 26:22, 31:12, 103:21, 123:6, 123:9, 138:18, 139:2, 139:5, 149:4, 163:22 realize [1] - 187:21 realizing [1] - 6:24 really [29] - 30:20, 90:17, 100:25, 104:8, 106:14, 106:24, 108:19, 108:21, 111:11, 112:4, 115:9, 117:20, 121:2, 121:12, 124:12, 125:23, 128:3, 128:5, 131:8, 134:7, 134:19, 136:6, 137:9, 171:6, 199:23 realtime [1] - 1:22 Realtime [1] - 205:3 reason [23] - 39:4, 39:16, 68:4, 75:6, 82:14, 94:7, 95:4, 96:10, 101:22, 106:21, 123:2, 129:16, 134:20, 139:23, 143:4, 163:9, 163:19, 163:22, 182:23, 183:9, 197:6, 202:12 reasonable [10] - 180:1, 180:23, 182:12, 193:24, 194:7, 194:8, 194:24, 196:20, 197:2, 197:4 reasonableness [1] - 179:10 reasonably [4] - 48:2, 79:13, 82:16, 153:18 reasons [12] - 38:22, 78:11, 94:7, 94:25, 96:13, 101:21, 123:21, 167:20, 168:15, 177:9, 202:2, 203:12 rebuttal [1] - 80:16 receipt [2] - 4:11, 28:7 receive [2] - 37:25, 42:24</p>
---	---	---	--	--

<p>received [36] - 3:12, 3:14, 3:16, 11:4, 15:13, 22:4, 25:10, 27:8, 31:17, 33:4, 37:1, 41:11, 47:22, 53:7, 59:7, 63:13, 63:18, 85:12, 96:4, 107:3, 122:24, 129:3, 132:23, 133:3, 134:23, 137:2, 140:8, 140:9, 140:17, 140:18, 141:11, 143:10, 148:9, 150:11, 151:19, 172:1</p> <p>receives [1] - 113:2</p> <p>receiving [4] - 92:24, 124:12, 142:12, 151:13</p> <p>recent [2] - 176:22, 181:18</p> <p>reception [1] - 6:20</p> <p>recess [2] - 93:17, 93:19</p> <p>recipient [1] - 87:23</p> <p>reckless [4] - 118:15, 119:3, 181:10, 199:19</p> <p>recognize [2] - 197:3, 202:8</p> <p>recognized [2] - 199:22, 202:11</p> <p>recommending [1] - 27:2</p> <p>reconstruct [2] - 131:14, 132:8</p> <p>record [13] - 4:25, 5:2, 5:13, 6:8, 6:25, 7:3, 14:6, 16:2, 42:15, 69:5, 78:25, 141:8, 202:7</p> <p>recorded [8] - 1:22, 63:18, 123:1, 131:10, 141:5, 160:19, 164:10, 172:3</p> <p>recording [21] - 100:5, 131:1, 131:7, 136:17, 136:19, 137:4, 141:9, 143:6, 143:8, 148:19, 151:17, 152:18, 160:7, 160:9, 160:11, 160:12, 160:17, 164:7, 191:5, 191:16, 191:19</p> <p>recordings [1] - 160:8</p> <p>recovered [4] - 74:8, 74:22, 75:2, 84:12</p>	<p>redacted [1] - 94:12</p> <p>Redirect [2] - 2:16, 2:21</p> <p>REDIRECT [2] - 94:2, 169:19</p> <p>reduced [1] - 100:20</p> <p>refer [5] - 9:13, 39:8, 44:4, 70:17, 161:4</p> <p>reference [6] - 23:22, 24:6, 29:8, 30:17, 52:15, 158:9</p> <p>referenced [4] - 164:15, 170:11, 179:25, 180:8</p> <p>referred [9] - 8:19, 16:22, 16:24, 18:3, 19:23, 37:3, 38:24, 39:18, 44:2</p> <p>referring [3] - 70:9, 106:16, 116:9</p> <p>refers [1] - 70:15</p> <p>reflects [1] - 35:23</p> <p>refrain [1] - 71:16</p> <p>refuse [1] - 105:14</p> <p>regalbegal [15] - 41:17, 41:20, 42:1, 42:6, 42:11, 44:18, 44:19, 44:22, 44:23, 46:14, 77:5, 78:16, 95:24, 152:9, 152:10</p> <p>regarding [11] - 40:5, 133:7, 147:19, 173:17, 176:23, 178:2, 178:14, 181:19, 182:10, 199:19, 200:18</p> <p>regardless [4] - 156:3, 177:5, 187:16, 191:5</p> <p>regional [1] - 48:15</p> <p>register [9] - 22:15, 25:21, 25:22, 26:8, 26:16, 27:10, 65:11, 195:4, 196:10</p> <p>registered [3] - 40:15, 42:3, 48:10</p> <p>Registration [1] - 3:7</p> <p>registration [3] - 25:23, 26:6, 26:9</p> <p>regular [17] - 9:19, 16:4, 16:10, 16:12, 18:25, 19:17, 53:17, 70:25, 71:1, 92:9, 101:1, 103:13, 103:19, 164:19, 196:11, 203:2</p> <p>regulation [1] - 170:18</p> <p>regulations [1] - 205:10</p> <p>reiterate [2] - 21:22, 163:25</p>	<p>reject [2] - 105:16</p> <p>rejected [2] - 178:7, 178:10</p> <p>relate [1] - 180:14</p> <p>related [11] - 5:17, 11:2, 15:15, 26:13, 39:2, 40:11, 67:15, 74:3, 99:14, 100:1, 105:3</p> <p>relates [2] - 125:1, 147:20</p> <p>relating [1] - 49:8</p> <p>relation [1] - 15:12</p> <p>relative [1] - 72:20</p> <p>relayed [1] - 88:24</p> <p>released [1] - 157:17</p> <p>relevance [4] - 71:20, 118:11, 124:25, 159:25</p> <p>relevant [5] - 8:25, 78:19, 91:12, 134:17, 143:24</p> <p>reliable [2] - 144:16, 149:3</p> <p>reliance [1] - 180:23</p> <p>relied [2] - 176:12, 176:14</p> <p>reluctant [1] - 75:1</p> <p>remained [1] - 35:14</p> <p>remains [1] - 34:17</p> <p>remember [6] - 36:3, 108:10, 154:15, 161:7, 162:6, 170:10</p> <p>reminds [1] - 6:7</p> <p>renew [2] - 65:23, 160:24</p> <p>renewed [4] - 159:17, 159:20, 159:23, 160:23</p> <p>repeat [2] - 92:4, 175:19</p> <p>repercussions [1] - 166:11</p> <p>rephrase [4] - 52:19, 52:22, 60:13, 112:1</p> <p>replaced [1] - 34:19</p> <p>report [9] - 40:14, 40:22, 41:4, 41:15, 41:16, 41:19, 42:13, 84:20, 168:17</p> <p>reported [5] - 75:8, 75:13, 78:1, 95:14, 205:8</p> <p>Reporter [3] - 1:24, 205:4, 205:17</p> <p>reporter [1] - 69:23</p> <p>REPORTER [2] - 154:8, 205:1</p> <p>Reporter's [1] - 2:10</p> <p>reports [7] - 40:5,</p>	<p>40:8, 40:9, 45:15, 45:20, 49:1, 193:3</p> <p>reposts [2] - 22:23, 23:5</p> <p>represent [4] - 132:12, 145:25, 157:18, 174:3</p> <p>representations [1] - 77:23</p> <p>represented [10] - 4:4, 4:5, 10:14, 78:3, 83:19, 144:12, 144:13, 146:19, 147:2, 180:18</p> <p>representing [1] - 98:1</p> <p>represents [1] - 181:13</p> <p>request [5] - 74:3, 82:2, 82:14, 200:3, 203:12</p> <p>requested [5] - 8:18, 144:1, 177:18, 184:5, 200:25</p> <p>requesting [1] - 120:5</p> <p>requests [2] - 105:16, 185:22</p> <p>require [1] - 12:19</p> <p>required [3] - 81:21, 171:13, 173:25</p> <p>requirement [2] - 177:25, 200:17</p> <p>requirements [2] - 176:8, 200:9</p> <p>requires [2] - 26:21, 192:8</p> <p>requiring [1] - 202:17</p> <p>research [4] - 98:19, 98:20, 105:2, 117:4</p> <p>Research [2] - 101:14, 101:16</p> <p>researched [2] - 98:17, 104:16</p> <p>researcher [1] - 157:8</p> <p>researchers [2] - 122:8, 131:6</p> <p>researching [2] - 104:1, 104:3</p> <p>residence [14] - 11:3, 33:15, 33:21, 33:23, 34:14, 48:8, 48:20, 49:9, 54:10, 55:7, 55:20, 80:22, 81:6, 90:21</p> <p>resident [4] - 7:14, 46:25, 47:1, 87:12</p> <p>residential [9] - 10:25, 11:16, 74:14, 90:6, 90:18, 137:7, 137:8, 138:2, 147:15</p>	<p>residing [2] - 146:15, 192:2</p> <p>resolve [2] - 136:14, 177:7</p> <p>resolving [1] - 76:23</p> <p>resourced [1] - 106:22</p> <p>respective [1] - 5:9</p> <p>respects [2] - 9:18, 176:8</p> <p>respond [1] - 155:4</p> <p>responded [1] - 195:1</p> <p>responds [1] - 88:11</p> <p>response [8] - 12:14, 21:2, 67:16, 129:21, 147:1, 148:16, 150:11, 179:25</p> <p>responses [1] - 8:14</p> <p>responsibilities [2] - 14:22, 15:4</p> <p>responsive [1] - 167:8</p> <p>rest [4] - 50:12, 68:25, 69:11, 170:8</p> <p>restarted [1] - 58:17</p> <p>restate [2] - 12:1, 190:10</p> <p>restricted [3] - 38:2, 38:21, 59:18</p> <p>Rests..... [1] - 2:4</p> <p>Rests..... [1] - 2:5</p> <p>result [4] - 13:10, 94:5, 94:13, 150:25</p> <p>results [1] - 19:25</p> <p>retail [1] - 180:11</p> <p>rethink [1] - 75:24</p> <p>retrieved [1] - 181:24</p> <p>return [3] - 80:2, 85:6, 144:16</p> <p>returned [4] - 45:8, 45:9, 45:12, 83:16</p> <p>returning [2] - 27:11, 151:1</p> <p>reuse [2] - 66:14, 67:1</p> <p>reused [1] - 66:14</p> <p>reveal [1] - 105:23</p> <p>revealed [4] - 115:1, 125:19, 160:13, 192:24</p> <p>revealing [1] - 101:24</p> <p>review [9] - 35:1, 36:6, 54:4, 61:12, 63:12, 66:25, 82:6, 105:3, 116:11</p> <p>reviewed [15] - 30:23, 49:1, 52:6, 61:14, 83:6, 83:23, 100:1, 100:2, 100:3, 104:12, 104:20, 104:23, 110:24,</p>
---	---	---	--	---

<p>111:21, 142:14 reviewing [3] - 145:17, 145:18, 191:21 richness [1] - 100:19 Riley [2] - 194:23, 196:25 risen [1] - 73:1 risk [6] - 116:2, 123:6, 123:9, 123:17, 166:19, 166:22 risks [4] - 124:13, 126:3, 165:22, 172:16 RMR [2] - 1:23, 205:17 road [1] - 78:19 roll [1] - 158:2 room [9] - 17:16, 17:17, 17:19, 51:20, 51:23, 68:25, 69:11, 84:5 rooms [2] - 51:21, 52:25 root [2] - 11:23, 34:2 rough [2] - 64:14, 64:15 route [1] - 136:3 Router [1] - 9:16 router [5] - 138:10, 138:20, 138:25, 139:18 router's [1] - 139:2 rule [18] - 52:5, 76:17, 118:14, 171:18, 175:20, 175:25, 176:2, 176:3, 177:13, 177:15, 181:19, 189:21, 198:5, 198:22, 199:1, 199:2, 200:14 Rule [29] - 12:3, 12:23, 13:1, 82:11, 83:8, 99:10, 175:19, 176:6, 177:6, 177:8, 178:3, 181:14, 182:22, 186:15, 186:22, 186:24, 188:2, 197:8, 197:24, 198:15, 198:23, 199:13, 200:4, 200:9, 200:17, 201:10, 201:12, 201:16, 201:22 ruled [3] - 83:7, 176:6, 186:21 rules [3] - 99:9, 104:18, 199:25 Rules [2] - 12:4, 99:6 ruling [3] - 167:21,</p>	<p>177:5, 203:18 rummage [3] - 84:8, 84:13, 84:22 rummaged [1] - 194:13 run [21] - 16:22, 17:15, 60:14, 60:22, 61:25, 85:5, 101:4, 105:23, 108:7, 108:16, 109:8, 109:23, 109:24, 110:13, 110:14, 114:23, 127:8, 143:18, 155:24, 163:14, 169:12 running [9] - 32:20, 57:22, 58:3, 103:8, 120:18, 121:2, 121:11, 163:13, 197:9 runs [4] - 16:4, 109:6, 129:16, 152:24</p>	<p>scientist [1] - 174:5 scope [4] - 75:22, 182:7, 182:11, 182:21 screen [8] - 24:15, 32:13, 35:9, 54:25, 130:24, 132:11, 132:14, 148:8 Screen [1] - 3:13 script [1] - 127:25 Script [1] - 3:12 scrupulous [1] - 69:24 scrutinized [1] - 73:6 seal [12] - 3:12, 3:14, 3:16, 128:24, 129:1, 129:3, 132:18, 132:19, 132:23, 133:4, 151:6, 166:2 sealed [4] - 149:6, 165:24, 166:1, 166:4 sealing [1] - 133:15 seals [1] - 166:6 search [75] - 4:19, 9:2, 10:25, 13:10, 19:20, 19:24, 33:17, 37:2, 41:8, 48:23, 49:2, 49:3, 54:6, 54:9, 54:20, 55:19, 55:20, 55:22, 56:1, 56:2, 70:7, 70:8, 70:9, 70:15, 70:18, 70:24, 71:1, 76:19, 77:20, 77:21, 77:25, 80:20, 80:24, 83:1, 84:3, 84:7, 84:25, 90:6, 99:17, 100:2, 110:17, 111:18, 113:25, 137:14, 144:23, 147:15, 165:24, 165:25, 166:3, 167:12, 175:14, 175:22, 177:1, 177:2, 177:12, 177:18, 178:16, 182:3, 183:7, 183:8, 183:18, 184:1, 184:6, 184:23, 185:2, 185:3, 185:20, 185:22, 197:12, 198:4, 198:24, 199:7, 199:8, 203:5 searchable [1] - 70:13 searched [4] - 176:13, 183:19, 186:13, 194:14 searching [2] - 30:6, 84:18 seat [2] - 13:21, 97:10</p>	<p>seated [1] - 5:10 second [19] - 26:7, 41:2, 41:4, 50:7, 71:4, 74:11, 74:24, 75:3, 82:5, 84:14, 89:7, 93:4, 99:1, 109:7, 117:19, 118:10, 132:22, 161:3, 201:8 seconds [4] - 86:22, 87:2, 191:11 secretive [1] - 72:16 secretly [1] - 160:19 section [20] - 14:13, 21:10, 21:15, 21:20, 27:23, 30:3, 30:6, 30:9, 30:10, 30:15, 30:18, 30:23, 31:2, 31:25, 32:2, 32:10, 44:25, 184:4 Section [1] - 205:6 sections [8] - 27:19, 27:21, 29:4, 30:16, 31:3, 31:7, 31:10, 157:11 secure [11] - 100:14, 106:14, 106:19, 106:20, 106:25, 108:20, 154:20, 155:2, 155:4, 170:17, 196:5 security [24] - 15:1, 15:2, 15:17, 17:23, 23:17, 27:2, 98:13, 98:18, 109:13, 115:12, 122:8, 162:9, 162:12, 162:13, 162:15, 162:16, 170:16, 170:23, 170:24, 180:18, 187:7, 187:9 see [47] - 5:10, 16:15, 17:10, 20:19, 20:20, 24:15, 27:12, 31:21, 32:1, 32:7, 32:11, 32:23, 35:9, 35:10, 42:5, 47:5, 54:21, 54:23, 55:1, 76:14, 77:8, 78:7, 78:8, 78:21, 91:11, 92:15, 94:15, 106:5, 114:25, 125:8, 129:20, 131:14, 134:7, 134:8, 134:10, 138:21, 143:15, 146:23, 147:18, 148:16, 157:16, 162:2, 166:15, 195:16, 195:25</p>	<p>seeing [3] - 6:7, 68:12, 148:7 seek [7] - 74:21, 82:19, 83:2, 100:22, 145:5, 182:19, 200:14 seeking [6] - 11:11, 80:22, 82:20, 179:12, 181:1, 181:15 seem [3] - 34:22, 72:10, 165:9 sees [3] - 87:23, 92:17, 135:20 seize [1] - 33:10 seized [8] - 8:2, 36:12, 36:18, 49:9, 57:17, 57:24, 57:25, 105:5 seizing [1] - 58:10 seizure [2] - 12:9, 185:20 select [1] - 53:13 Senate [1] - 115:4 Senator [1] - 159:7 send [23] - 26:21, 61:2, 61:3, 84:16, 84:17, 87:1, 88:4, 88:20, 111:13, 115:10, 124:17, 129:18, 136:20, 140:20, 144:15, 149:10, 149:14, 150:4, 150:7, 169:24, 184:8 sending [7] - 48:5, 87:22, 91:6, 91:17, 131:22, 151:12, 182:16 sends [9] - 47:4, 61:7, 62:16, 86:9, 86:18, 92:14, 112:16, 113:3, 128:15 sense [6] - 52:21, 60:16, 177:11, 180:10, 186:19, 191:15 sensitive [2] - 72:19, 105:10 sent [40] - 9:7, 10:19, 45:16, 45:20, 48:9, 51:15, 63:19, 63:21, 63:22, 64:1, 64:4, 91:25, 92:1, 92:2, 92:8, 92:9, 93:10, 93:11, 93:14, 94:5, 94:8, 96:11, 110:15, 112:10, 116:12, 125:16, 128:9, 128:11, 131:9, 135:2, 136:19,</p>
S				
<p>S-o-g-h-o-i-a-n [1] - 97:20 S-u-i-n-g [1] - 180:1 safe [5] - 32:21, 73:12, 75:15, 75:24 safety [1] - 26:24 San [1] - 99:22 satisfied [1] - 176:7 satisfy [1] - 69:15 savannah [1] - 118:2 save [4] - 80:15, 122:6, 124:21 saved [4] - 122:25, 123:10, 131:12, 172:24 saves [1] - 182:3 savvy [1] - 25:25 saw [8] - 31:19, 54:23, 55:7, 55:8, 93:2, 122:8, 195:19 SC [1] - 29:16 SC/NN [1] - 29:15 Scat [1] - 30:17 scenario [1] - 117:19 scenarios [1] - 151:21 scenes [3] - 106:5, 144:5, 146:22 scholar [1] - 157:8 school [2] - 114:15, 158:11 School [1] - 154:5 Schumer [1] - 159:7 science [4] - 39:7, 98:11, 116:19, 117:23</p>				

<p>139:3, 140:13, 143:9, 148:6, 149:9, 149:22, 162:3, 171:2, 182:15 separate [3] - 49:17, 81:18, 81:19 separately [3] - 93:10, 93:11, 137:6 September [1] - 14:18 sequence [2] - 80:20, 141:22 serial [2] - 112:22, 113:6 series [3] - 11:6, 12:12, 134:11 serious [1] - 168:15 servant [1] - 7:6 serve [2] - 48:12, 74:12 server [51] - 7:24, 8:3, 8:4, 8:7, 21:2, 33:5, 36:10, 36:12, 36:22, 37:5, 45:10, 53:14, 57:17, 57:20, 57:22, 58:2, 58:4, 58:6, 58:9, 58:11, 59:19, 63:11, 63:16, 85:21, 85:23, 88:25, 103:7, 103:15, 110:2, 110:5, 110:20, 110:21, 112:20, 130:1, 132:3, 136:5, 136:6, 137:3, 140:18, 143:6, 150:12, 171:9, 172:1, 172:2, 188:24, 189:6, 189:15, 189:19, 192:20 servers [4] - 34:1, 34:3, 101:3, 101:7 service [44] - 16:9, 16:23, 16:24, 16:25, 17:1, 17:5, 17:6, 17:8, 17:10, 17:14, 17:16, 18:17, 32:18, 32:19, 36:18, 37:14, 42:21, 42:23, 43:7, 43:22, 43:24, 44:14, 47:15, 48:9, 48:11, 48:16, 48:17, 53:19, 70:18, 74:12, 74:15, 89:9, 89:12, 89:20, 101:8, 101:9, 103:17, 122:2, 122:21, 122:22, 136:24, 141:3, 161:17, 161:19 services [12] - 16:22, 17:13, 17:18, 17:21,</p>	<p>18:22, 19:2, 19:16, 19:18, 21:13, 101:7, 163:13, 163:14 session [4] - 6:17, 6:18, 86:13, 87:5 set [10] - 4:15, 8:13, 40:11, 41:4, 49:19, 60:21, 100:20, 106:25, 151:9, 171:8 sets [2] - 40:10, 99:8 Setser [2] - 11:1, 11:17 setting [1] - 103:17 settings [2] - 27:2, 170:19 seven [1] - 31:14 several [6] - 26:11, 72:2, 99:20, 118:21, 177:9, 180:13 sexual [4] - 27:25, 29:9, 45:3, 157:12 sexually [3] - 7:21, 30:13, 34:20 share [8] - 23:10, 23:12, 31:4, 44:1, 52:7, 72:23, 73:8, 173:19 sharing [1] - 24:11 shark [1] - 130:25 shat [1] - 161:22 Shell [1] - 3:12 shell [1] - 127:25 shop [1] - 180:12 short [1] - 9:16 shorthand [1] - 1:22 shortly [1] - 87:19 shot [2] - 130:24, 148:8 Shot [1] - 3:13 shots [2] - 132:11, 132:14 show [17] - 20:17, 29:9, 68:12, 77:10, 77:12, 79:17, 118:15, 132:1, 135:24, 136:19, 140:12, 140:14, 140:15, 140:16, 160:6, 179:10 showed [1] - 85:4 showing [5] - 19:25, 22:6, 26:3, 34:7, 127:20 shown [1] - 29:2 shows [8] - 40:19, 77:11, 134:15, 136:4, 136:17, 140:17, 141:9, 149:13 shut [3] - 58:7, 58:9,</p>	<p>58:19 side [4] - 22:19, 131:11, 151:12, 151:14 sides [1] - 174:17 sign [5] - 82:19, 137:11, 151:6, 185:17, 198:12 signed [10] - 10:11, 10:25, 37:5, 57:3, 59:4, 149:6, 183:22, 185:1, 185:15, 186:8 significant [5] - 35:13, 39:1, 145:8, 145:23, 203:22 signing [1] - 82:22 signs [1] - 29:9 silently [1] - 46:5 similar [9] - 6:4, 9:17, 9:19, 40:1, 42:17, 84:14, 116:12, 125:25, 200:24 similarity [1] - 87:25 similarly [2] - 17:14, 18:25 simple [2] - 84:15, 85:1 simplified [1] - 8:24 simplify [1] - 43:10 single [11] - 28:8, 29:1, 34:20, 36:1, 44:9, 53:21, 134:15, 139:9, 186:17, 197:23, 203:10 site [31] - 19:9, 19:23, 24:24, 25:12, 33:21, 34:24, 59:15, 102:11, 103:3, 103:8, 103:21, 105:20, 106:2, 106:3, 110:8, 112:6, 112:18, 112:24, 116:23, 117:1, 117:22, 124:20, 152:8, 171:14, 181:22, 202:24, 203:1, 203:4, 203:11 sites [6] - 19:13, 19:19, 21:16, 118:8, 163:17, 203:3 situation [1] - 123:17 six [1] - 42:2 Sixth [1] - 176:16 sketched [1] - 69:19 skilled [1] - 114:3 skills [1] - 173:24 skirt [1] - 199:21 sleep [1] - 107:20 sleeves [1] - 158:2 slide [1] - 29:2</p>	<p>slight [1] - 25:2 slightly [2] - 34:16, 67:4 slow [1] - 154:8 small [4] - 75:16, 124:15, 131:23, 132:1 smaller [2] - 23:16, 73:11 Smith [2] - 1:14, 116:10 so-and-so [1] - 135:11 so-called [1] - 165:5 social [5] - 6:20, 68:2, 68:12, 69:3, 69:12 society [2] - 39:13, 197:3 soft [1] - 29:16 software [51] - 16:11, 16:12, 16:17, 17:2, 17:5, 18:23, 19:5, 19:8, 23:12, 23:15, 23:23, 26:17, 26:21, 39:6, 63:8, 104:5, 106:8, 106:9, 106:12, 106:13, 106:15, 106:19, 106:20, 106:25, 107:10, 108:6, 108:8, 108:12, 108:15, 108:18, 108:20, 108:21, 108:24, 113:24, 113:25, 114:10, 115:13, 115:14, 120:16, 120:24, 121:3, 122:15, 123:20, 123:23, 147:4, 163:2, 170:18, 180:3, 196:18 SOGHOIAN [2] - 97:13, 154:2 Soghoian [17] - 2:19, 6:3, 6:5, 6:9, 6:19, 6:22, 67:25, 97:5, 97:19, 97:21, 147:4, 147:17, 152:6, 153:25, 154:12, 169:21, 173:16 solely [1] - 174:25 soliciting [1] - 78:10 solve [2] - 166:9, 171:4 someone [14] - 20:3, 20:14, 53:20, 53:24, 59:8, 59:23, 101:25, 102:10, 102:23, 124:18, 150:12, 162:13, 172:23,</p>	<p>203:4 someplace [1] - 46:22 sometime [2] - 25:1, 34:10 sometimes [9] - 19:23, 50:19, 70:17, 108:6, 108:7, 119:3, 119:4, 178:9, 178:10 somewhat [3] - 4:23, 90:2, 184:15 somewhere [4] - 8:5, 16:18, 16:19, 198:25 soon [2] - 85:14, 86:14 sophisticated [1] - 124:19 sorry [23] - 41:3, 41:25, 51:4, 51:25, 53:23, 60:16, 61:6, 66:20, 91:10, 92:4, 110:10, 111:10, 112:13, 117:12, 125:7, 140:5, 140:6, 141:18, 143:20, 154:9, 157:22, 167:16, 168:24 sort [17] - 5:7, 8:21, 9:20, 79:2, 107:18, 112:21, 117:13, 118:20, 121:6, 123:5, 124:4, 138:19, 139:20, 140:24, 149:6, 175:22, 190:15 sought [8] - 8:16, 12:25, 35:19, 37:1, 85:12, 146:1, 181:24, 182:24 sound [3] - 94:9, 96:12, 172:4 sounded [1] - 52:17 source [14] - 12:4, 61:14, 127:14, 132:24, 134:10, 134:15, 134:18, 138:24, 139:11, 142:8, 149:21, 173:6, 173:7, 173:12 sources [1] - 141:24 South [1] - 6:12 Southern [1] - 200:7 speaker [1] - 6:19 speakers [1] - 6:21 speaking [3] - 7:12, 99:21, 170:14 special [10] - 14:10, 14:17, 15:6, 17:4, 18:22, 100:11, 107:10, 113:4, 120:25, 194:12</p>
--	--	---	---	--

<p>Special [24] - 5:15, 13:17, 27:10, 93:23, 94:4, 100:9, 100:24, 103:1, 106:1, 127:15, 129:17, 129:19, 130:4, 130:13, 131:7, 134:22, 137:8, 138:11, 143:3, 143:7, 148:13, 150:4, 183:4, 193:18</p> <p>special-purpose [1] - 100:11</p> <p>specific [25] - 35:7, 35:20, 35:24, 36:5, 39:11, 40:17, 40:19, 44:18, 46:9, 47:11, 48:10, 52:15, 74:6, 74:21, 83:18, 84:10, 84:11, 86:2, 92:21, 162:6, 166:8, 168:8, 178:12, 178:13, 189:21</p> <p>specifically [10] - 18:19, 26:15, 30:5, 51:1, 67:25, 82:14, 100:16, 167:4, 192:10, 202:18</p> <p>specifics [2] - 74:25, 170:10</p> <p>specify [1] - 177:2</p> <p>Speech [1] - 97:23</p> <p>speech [4] - 153:2, 153:7, 154:5, 170:11</p> <p>speeches [2] - 153:8, 154:16</p> <p>spell [1] - 97:17</p> <p>spelled [2] - 12:24, 14:7</p> <p>spent [2] - 28:1, 42:3</p> <p>split [1] - 28:17</p> <p>spoken [4] - 99:20, 99:23, 104:14, 104:16</p> <p>spread [1] - 22:20</p> <p>Sprint [1] - 160:13</p> <p>stage [1] - 109:7</p> <p>stand [4] - 13:22, 93:16, 96:21, 96:23</p> <p>standpoint [2] - 111:24, 145:24</p> <p>stands [2] - 8:20, 102:19</p> <p>start [6] - 52:16, 73:10, 75:24, 110:11, 133:25, 180:13</p> <p>started [4] - 29:9, 124:3, 169:22, 191:21</p>	<p>starting [1] - 126:17</p> <p>starts [2] - 93:12, 193:15</p> <p>State [6] - 98:24, 127:2, 127:4, 190:25, 193:21, 193:22</p> <p>state [13] - 14:6, 26:15, 61:8, 67:13, 97:17, 98:22, 99:3, 101:18, 121:24, 193:8, 193:9, 193:20, 201:14</p> <p>statement [7] - 62:12, 71:22, 102:22, 153:9, 154:14, 165:16, 202:14</p> <p>statements [4] - 11:7, 11:12, 11:19, 49:6</p> <p>states [3] - 21:1, 21:7, 21:17</p> <p>STATES [2] - 1:1, 1:3</p> <p>States [12] - 1:13, 4:2, 4:4, 39:13, 75:12, 76:7, 176:24, 185:14, 200:20, 205:4, 205:6, 205:11</p> <p>stating [2] - 37:22, 176:11</p> <p>Steele [1] - 1:19</p> <p>stenographically [1] - 205:8</p> <p>step [18] - 74:11, 74:24, 75:3, 89:2, 89:7, 90:8, 105:4, 105:5, 105:18, 105:21, 105:25, 109:3, 119:9, 142:16, 145:11, 146:13, 175:12, 196:5</p> <p>stepped [1] - 69:4</p> <p>steps [12] - 48:7, 74:8, 89:25, 111:25, 126:23, 175:7, 175:9, 178:17, 179:1, 179:9, 202:18</p> <p>still [31] - 19:10, 29:11, 35:15, 35:16, 36:19, 37:15, 58:14, 58:23, 69:16, 73:18, 73:23, 74:23, 86:17, 87:3, 88:24, 90:20, 94:1, 101:14, 103:12, 107:4, 109:1, 166:1, 169:23, 172:4, 188:12, 191:13, 192:7, 193:7</p> <p>Stingray [1] - 126:1</p>	<p>Stingrays [2] - 126:3, 126:9</p> <p>stolen [1] - 172:13</p> <p>stop [3] - 32:24, 112:12, 140:5</p> <p>stored [3] - 84:10, 187:6, 201:6</p> <p>stories [1] - 31:12</p> <p>story [1] - 69:25</p> <p>stream [4] - 63:9, 132:2, 140:8, 140:9</p> <p>Stream [1] - 3:15</p> <p>Street [1] - 1:24</p> <p>street [1] - 48:4</p> <p>strength [1] - 144:20</p> <p>strengthen [1] - 202:21</p> <p>stresses [1] - 126:14</p> <p>strike [1] - 102:17</p> <p>strong [3] - 23:19, 67:7, 125:23</p> <p>strong-arm [1] - 67:7</p> <p>strongest [1] - 181:16</p> <p>stronghold [1] - 77:11</p> <p>struck [1] - 108:18</p> <p>structurally [1] - 39:25</p> <p>students [2] - 131:6, 154:11</p> <p>stuff [6] - 5:17, 68:10, 68:11, 128:17, 146:22, 149:8</p> <p>stumble [3] - 20:15, 102:10, 102:23</p> <p>Stuxnet [1] - 123:21</p> <p>style [1] - 27:15</p> <p>subcategories [2] - 29:21, 29:24</p> <p>subforum [3] - 28:8, 38:6, 86:3</p> <p>subforums [6] - 27:16, 27:18, 28:19, 29:4, 29:24, 30:14</p> <p>subject [6] - 65:3, 65:6, 65:22, 66:3, 67:3, 151:1</p> <p>subjects [1] - 75:21</p> <p>submit [3] - 89:16, 178:9, 196:19</p> <p>submitted [2] - 55:25, 111:1</p> <p>subpoena [25] - 10:21, 11:15, 11:17, 43:7, 47:14, 48:5, 48:9, 48:12, 74:12, 75:4, 89:10, 89:12, 89:16, 89:19, 90:5, 90:18, 141:16, 142:16, 142:20, 145:6, 147:14, 148:23, 149:15, 196:4</p>	<p>subpoenas [1] - 45:17</p> <p>subscribe [1] - 200:9</p> <p>subscriber [1] - 48:4</p> <p>subsequent [1] - 104:21</p> <p>subsequently [3] - 10:22, 123:1, 123:11</p> <p>substance [1] - 187:22</p> <p>substantively [1] - 12:22</p> <p>subtle [1] - 108:5</p> <p>successful [1] - 77:19</p> <p>successfully [6] - 62:20, 71:11, 72:11, 109:6, 130:14</p> <p>succinctly [1] - 72:4</p> <p>sufficient [1] - 202:24</p> <p>suggest [3] - 72:6, 187:25, 201:18</p> <p>suggestive [1] - 34:21</p> <p>suggests [1] - 151:4</p> <p>Suing [1] - 179:25</p> <p>Suite [1] - 1:19</p> <p>summarize [1] - 144:12</p> <p>summarizing [1] - 57:7</p> <p>summary [4] - 8:24, 38:23, 45:21, 182:7</p> <p>support [3] - 5:8, 50:5, 155:21</p> <p>supported [1] - 202:9</p> <p>supports [2] - 155:14, 155:15</p> <p>supposed [2] - 62:10, 62:23</p> <p>suppress [9] - 4:18, 4:24, 4:25, 11:11, 91:12, 137:19, 147:20, 203:13</p> <p>suppressed [2] - 12:19, 202:6</p> <p>suppression [8] - 4:8, 5:4, 137:15, 146:24, 177:8, 177:10, 179:8, 181:8</p> <p>Supreme [7] - 175:20, 181:18, 194:20, 194:23, 195:13, 195:17, 195:22</p> <p>supreme [1] - 98:22</p> <p>surprised [2] - 78:6, 172:7</p> <p>surveillance [8] - 98:17, 99:23, 104:19, 125:25, 126:1, 152:11, 160:6, 161:15</p> <p>sustain [1] - 77:17</p>	<p>sustained [2] - 78:12, 78:23</p> <p>swapped [2] - 139:1, 139:5</p> <p>sworn [7] - 13:19, 13:20, 14:3, 55:22, 81:1, 97:8, 97:14</p> <p>system [13] - 7:8, 41:13, 63:4, 84:17, 110:2, 113:10, 119:13, 127:6, 129:7, 129:12, 130:10, 148:3, 180:18</p>
T				
<p>table [1] - 5:11</p> <p>tactic [1] - 166:9</p> <p>taint [1] - 68:8</p> <p>tainted [2] - 68:18, 79:23</p> <p>talks [1] - 134:12</p> <p>tamper [4] - 150:21, 152:15, 170:5</p> <p>tamper-evident [4] - 150:21, 152:15, 170:5</p> <p>tampered [10] - 94:24, 95:5, 96:14, 135:1, 143:12, 149:8, 151:7, 152:22, 164:5, 170:5</p> <p>tampering [2] - 91:20, 95:2</p> <p>tape [5] - 190:7, 190:15, 190:17, 191:4, 191:9</p> <p>tapes [5] - 187:6, 187:11, 188:19, 190:24</p> <p>target [5] - 60:6, 114:5, 118:7, 163:17</p> <p>targeted [18] - 64:5, 64:16, 64:22, 66:10, 117:15, 117:18, 122:19, 122:20, 123:9, 125:15, 128:15, 128:20, 129:15, 169:1, 169:7, 169:8, 169:10, 197:22</p> <p>targeting [1] - 122:5</p> <p>task [1] - 87:9</p> <p>tax [1] - 174:3</p> <p>teach [1] - 15:19</p> <p>team [2] - 104:15, 108:23</p> <p>tech [1] - 25:25</p> <p>tech-savvy [1] - 25:25</p>				

<p>technical [7] - 12:17, 12:20, 60:17, 77:1, 92:19, 163:1, 175:12</p> <p>technicality [1] - 157:17</p> <p>technically [2] - 8:22, 124:19</p> <p>technique [11] - 8:20, 9:13, 37:3, 38:21, 39:23, 78:15, 78:19, 104:1, 115:23, 179:7, 181:1</p> <p>techniques [1] - 100:21</p> <p>technological [1] - 145:21</p> <p>technologically [1] - 175:17</p> <p>technologies [4] - 53:20, 96:9, 161:16, 190:13</p> <p>technologist [4] - 6:3, 97:23, 154:7, 154:10</p> <p>Technology [1] - 97:24</p> <p>technology [24] - 9:25, 15:8, 44:1, 46:23, 53:24, 64:21, 98:16, 98:18, 99:23, 104:11, 104:19, 111:24, 115:23, 118:25, 125:25, 144:5, 159:24, 166:16, 187:21, 191:3, 195:10, 195:11, 195:18, 199:23</p> <p>teed [2] - 5:3</p> <p>teenager [4] - 114:13, 114:14, 125:15, 125:18</p> <p>telephone [1] - 135:9</p> <p>ten [5] - 88:10, 107:3, 151:16, 174:18</p> <p>tens [2] - 123:8, 162:5</p> <p>term [10] - 4:19, 8:22, 29:6, 38:13, 39:7, 39:8, 109:13, 109:17, 109:18, 117:23</p> <p>terms [9] - 22:25, 23:2, 23:3, 43:19, 45:24, 111:8, 111:9, 111:18, 111:20</p> <p>test [5] - 55:11, 108:21, 108:25, 198:3, 198:4</p> <p>testified [32] - 14:3, 34:4, 53:3, 54:6, 55:11, 57:16, 70:10,</p>	<p>97:14, 98:23, 98:24, 99:2, 99:3, 99:6, 99:9, 99:13, 110:24, 129:17, 130:4, 130:14, 131:8, 137:9, 137:22, 142:14, 143:8, 148:14, 150:15, 162:4, 162:21, 167:19, 168:13, 193:18</p> <p>testify [5] - 5:16, 6:4, 55:15, 102:8, 156:9</p> <p>testifying [4] - 69:7, 99:1, 149:18, 152:13</p> <p>testimony [18] - 49:20, 50:4, 50:24, 98:3, 102:18, 103:2, 104:25, 147:10, 152:6, 152:20, 154:17, 174:16, 189:13, 191:11, 194:12, 197:10, 203:1, 203:24</p> <p>Texas [3] - 116:3, 197:14, 200:7</p> <p>text [3] - 34:16, 92:9, 94:18</p> <p>THASPRO [1] - 163:17</p> <p>THE [171] - 1:9, 1:12, 1:17, 4:1, 5:19, 5:22, 5:24, 6:5, 13:18, 13:21, 14:1, 22:4, 25:10, 27:8, 31:17, 39:21, 40:3, 49:15, 50:4, 50:8, 50:15, 52:19, 56:19, 56:23, 64:24, 66:1, 66:19, 66:21, 67:11, 67:13, 67:18, 67:21, 68:20, 69:2, 69:8, 69:15, 69:18, 71:6, 71:24, 72:9, 72:16, 72:22, 74:5, 74:10, 74:11, 74:17, 74:18, 75:5, 76:3, 76:8, 76:12, 77:17, 79:12, 79:25, 80:9, 80:12, 80:17, 80:19, 90:23, 91:1, 91:3, 91:15, 93:8, 93:16, 93:18, 93:20, 93:24, 94:1, 96:18, 96:21, 96:23, 96:24, 96:25, 97:2, 97:6, 97:9, 102:16, 111:22, 112:3, 119:5, 119:21, 124:24, 125:5, 125:12, 125:13, 126:15, 127:18,</p>	<p>128:23, 129:2, 130:19, 132:22, 132:24, 133:1, 133:3, 133:10, 133:14, 137:21, 140:20, 140:23, 140:25, 141:4, 141:17, 141:20, 142:2, 142:8, 142:9, 142:13, 142:18, 142:19, 142:21, 142:22, 143:20, 145:14, 147:9, 147:22, 149:18, 149:21, 149:24, 149:25, 150:1, 150:3, 150:7, 150:11, 150:24, 151:3, 151:8, 151:11, 151:22, 152:2, 153:17, 153:22, 154:8, 154:24, 155:6, 160:2, 168:5, 168:8, 169:17, 174:7, 174:9, 174:11, 174:12, 174:14, 174:21, 174:23, 182:14, 183:11, 183:13, 183:15, 183:25, 184:4, 185:10, 185:17, 186:23, 187:3, 187:20, 188:15, 189:17, 190:4, 190:11, 190:21, 191:10, 192:1, 192:17, 192:25, 193:24, 194:6, 194:11, 198:10, 198:18, 203:15</p> <p>themselves [1] - 23:9</p> <p>thereby [3] - 9:4, 144:23, 178:18</p> <p>therefore [5] - 81:14, 191:21, 191:24, 193:23, 199:16</p> <p>therein [1] - 28:3</p> <p>they've [1] - 179:20</p> <p>thinks [1] - 116:19</p> <p>third [6] - 195:5, 195:7, 196:3, 196:11, 196:16, 196:23</p> <p>thorough [1] - 62:8</p> <p>thousand [1] - 108:9</p> <p>thousands [8] - 16:5, 73:2, 105:19, 115:11, 121:7, 123:8, 162:5</p>	<p>threats [1] - 114:15</p> <p>three [9] - 99:3, 101:15, 104:4, 117:12, 118:6, 150:18, 156:12, 158:23, 166:1</p> <p>throughout [1] - 84:6</p> <p>throw [1] - 159:18</p> <p>thumbnails [1] - 32:7</p> <p>tie [1] - 79:10</p> <p>tied [2] - 48:20, 200:16</p> <p>timberline [2] - 114:11, 125:15</p> <p>timeframe [2] - 40:20, 65:2</p> <p>TIMOTHY [1] - 1:9</p> <p>Title [9] - 39:12, 39:20, 81:12, 81:18, 81:20, 82:3, 82:7, 82:22, 205:6</p> <p>titles [4] - 27:18, 29:4, 32:1, 32:3</p> <p>TO [1] - 91:12</p> <p>today [31] - 4:2, 4:5, 4:7, 5:4, 5:12, 5:20, 5:24, 6:6, 6:16, 6:25, 7:5, 7:7, 7:10, 8:23, 8:25, 49:19, 49:21, 50:1, 97:25, 98:3, 103:24, 154:17, 164:4, 174:17, 179:16, 189:14, 194:12, 197:10, 203:20, 203:25</p> <p>toddler [3] - 30:8, 30:10</p> <p>toddlers [2] - 30:5, 30:13</p> <p>together [3] - 31:15, 77:16, 79:10</p> <p>took [13] - 40:19, 42:6, 58:10, 73:16, 83:13, 86:21, 95:10, 122:1, 158:10, 158:22, 175:7, 175:9, 179:9</p> <p>tool [13] - 48:14, 100:11, 115:19, 126:1, 131:5, 134:4, 155:22, 165:14, 166:8, 166:9, 166:12, 180:6</p> <p>tools [1] - 117:5</p> <p>top [9] - 16:4, 28:16, 29:23, 103:12, 134:8, 150:13, 154:7, 154:10, 167:25</p> <p>topic [5] - 32:1, 115:3, 119:24, 151:23, 157:15</p>	<p>topics [5] - 6:14, 28:23, 30:4, 38:10, 51:24</p> <p>Tor [118] - 9:16, 9:17, 9:23, 15:22, 16:2, 16:3, 16:7, 16:8, 16:11, 16:14, 16:17, 16:21, 16:23, 17:2, 17:12, 17:21, 18:14, 18:23, 18:24, 19:1, 19:2, 19:3, 19:4, 19:6, 19:15, 19:18, 19:23, 19:24, 21:13, 36:16, 37:13, 53:19, 57:8, 57:11, 70:6, 70:8, 70:9, 70:12, 70:13, 70:22, 72:24, 85:24, 100:6, 100:7, 100:10, 100:11, 100:12, 100:14, 100:16, 100:17, 100:20, 100:22, 100:24, 101:2, 101:8, 101:11, 101:12, 101:14, 101:17, 101:20, 101:22, 102:3, 102:9, 103:7, 103:11, 103:12, 103:19, 105:7, 105:10, 105:13, 105:14, 107:2, 107:5, 107:12, 107:13, 107:15, 107:17, 107:25, 108:24, 109:6, 115:12, 116:18, 117:9, 117:10, 117:11, 119:13, 119:24, 120:9, 121:12, 122:13, 122:21, 122:24, 155:14, 155:16, 155:17, 155:18, 155:21, 162:8, 163:4, 163:5, 163:13, 163:19, 163:21, 164:1, 164:2, 164:3, 164:16, 164:18, 164:23, 169:2, 169:5, 178:16, 203:3, 203:5</p> <p>TOR [1] - 15:22</p> <p>TOR's [1] - 101:19</p> <p>Torpedo [7] - 118:10, 120:12, 121:9, 121:18, 172:20, 173:1, 173:5</p> <p>total [2] - 76:18, 78:4</p>
--	---	--	---	--

totality [1] - 51:10
totally [2] - 68:12, 146:19
towards [2] - 66:10, 126:25
track [3] - 112:23, 188:5, 190:13
tracking [17] - 186:25, 187:14, 187:23, 188:4, 188:8, 188:10, 189:25, 190:7, 190:15, 190:17, 190:25, 191:1, 191:4, 192:3, 192:6, 193:1, 193:23
tracks [2] - 102:1, 126:2
Trade [4] - 159:15, 160:4, 160:11, 172:9
trade [10] - 15:9, 23:2, 24:19, 26:13, 26:25, 31:4, 34:17, 51:9, 65:10, 160:6
traditional [2] - 17:3, 19:19
trafficked [1] - 31:7
trafficking [1] - 79:14
training [13] - 15:11, 15:13, 21:5, 23:1, 24:19, 26:12, 66:25, 96:13, 98:9, 99:19, 106:17, 113:18, 156:11
trainings [1] - 15:15
transcript [2] - 205:7, 205:9
TRANSCRIPT [1] - 1:9
transcripts [1] - 104:25
transfer [3] - 135:13, 135:14, 135:17
transferred [6] - 36:14, 57:19, 58:16, 58:20, 135:18
transferring [1] - 86:23
transit [2] - 96:5, 96:15
translated [1] - 65:18
translation [4] - 43:19, 44:2, 46:24, 138:12
transmission [2] - 86:21, 94:13
transmit [4] - 9:10, 110:3, 116:14, 150:21
transmits [1] - 127:9
transmitted [13] - 60:1, 63:10, 89:24, 93:2, 112:19,

130:16, 131:21, 134:25, 136:18, 139:8, 139:10, 150:20, 152:14
transparency [2] - 165:19
transparent [2] - 126:13, 165:11
transport [1] - 170:13
travel [3] - 98:6, 193:8, 193:9
traveled [2] - 143:17, 203:21
treat [1] - 171:4
tree [1] - 90:15
trial [5] - 4:15, 13:24, 90:12, 137:18, 145:16
trick [1] - 114:13
tried [1] - 136:20
trigger [2] - 44:19
triggered [4] - 38:4, 46:12, 86:4, 87:8
triggering [6] - 38:12, 59:23, 64:7, 65:8, 66:2, 192:23
trip [1] - 54:16
troubling [1] - 202:10
true [22] - 17:13, 24:3, 33:5, 37:15, 53:15, 55:11, 57:12, 101:5, 155:11, 155:13, 162:8, 162:24, 163:3, 163:8, 163:12, 166:6, 167:3, 170:22, 187:18, 189:20, 192:7, 205:7
try [12] - 12:1, 36:7, 47:25, 54:16, 70:7, 70:24, 72:3, 76:25, 104:17, 106:14, 135:6, 149:5
trying [16] - 67:6, 67:24, 76:15, 77:15, 81:10, 144:25, 147:4, 149:1, 163:15, 169:13, 170:1, 176:1, 184:22, 187:12, 199:21
TSA [2] - 159:9, 159:10
turn [2] - 173:5, 173:22
turned [9] - 83:22, 85:2, 94:11, 100:4, 121:14, 121:15, 160:13, 172:18, 173:4

turning [1] - 59:4
turns [1] - 202:20
tweet [2] - 156:25, 161:22
tweeted [4] - 69:6, 157:5, 157:6, 162:5
tweeting [4] - 68:1, 68:4, 69:3, 69:12
tweets [2] - 73:5, 162:7
twice [1] - 150:18
Twitter [2] - 156:18, 156:24
two [52] - 8:8, 10:13, 16:7, 17:17, 21:8, 21:9, 21:10, 22:16, 22:18, 25:14, 31:10, 34:18, 35:25, 39:5, 40:10, 41:21, 63:9, 66:21, 68:25, 72:10, 74:7, 78:5, 81:24, 81:25, 86:11, 87:3, 88:2, 90:4, 90:7, 100:4, 100:25, 117:13, 120:9, 120:11, 120:15, 123:4, 128:13, 131:1, 131:7, 133:1, 134:7, 135:4, 138:6, 140:8, 140:9, 142:6, 158:8, 159:12, 168:16, 183:18, 186:18, 189:7
two-way [6] - 63:9, 100:4, 131:1, 131:7, 140:8, 140:9
two-week [2] - 41:21, 78:5
type [14] - 15:12, 16:9, 27:18, 53:20, 53:24, 99:2, 102:23, 136:13, 172:16, 175:10, 178:4, 178:19, 195:14, 195:22
typed [2] - 9:4, 103:21
types [2] - 15:7, 17:23
typically [1] - 70:15

U

U.S [12] - 8:16, 106:23, 107:4, 123:18, 123:22, 124:5, 152:24, 159:14, 171:13, 171:17, 179:25, 181:20
ultimately [7] - 10:9, 11:2, 13:6, 48:20, 166:6, 180:25, 192:1

unable [2] - 32:19, 32:20
unattractive [1] - 156:17
unaware [1] - 183:2
unbeknownst [1] - 196:19
unchanged [1] - 35:15
under [30] - 2:8, 3:12, 3:14, 3:16, 8:4, 9:6, 12:23, 29:8, 29:12, 29:24, 37:14, 39:15, 42:4, 58:7, 61:15, 94:1, 128:24, 128:25, 129:3, 132:18, 132:19, 132:23, 133:4, 142:8, 173:16, 181:16, 182:22, 186:24, 200:17, 203:17
understandably [1] - 39:6
unencrypted [3] - 92:5, 94:18, 172:3
unethical [1] - 40:2
UNIDENTIFIED [2] - 133:18, 133:22
Union [1] - 97:22
unique [15] - 44:5, 44:10, 44:16, 65:13, 66:13, 67:2, 72:6, 74:22, 75:2, 76:18, 112:10, 112:14, 112:17, 113:2, 180:7
unit [5] - 14:14, 14:22, 15:4, 15:7, 76:8
UNITED [2] - 1:1, 1:3
United [12] - 1:13, 4:2, 4:4, 39:13, 75:12, 76:7, 176:24, 185:14, 200:20, 205:4, 205:6, 205:11
University [7] - 98:12, 98:14, 98:15, 153:2, 153:11, 154:4, 158:6
unknowingly [2] - 60:2, 60:3
unlawful [1] - 163:7
unless [1] - 133:15
unlike [2] - 9:19, 191:15
unlikely [1] - 20:14
unmask [1] - 146:13
unnecessary [2] - 90:17, 200:12
unpleasant [4] - 158:8, 161:3, 161:7, 161:9
unreliable [1] - 79:8

unsealed [1] - 73:4
unsubstantiated [1] - 69:21
untruthful [1] - 79:22
up [63] - 5:4, 14:22, 16:5, 19:25, 22:16, 24:18, 28:17, 28:22, 35:1, 38:11, 46:4, 47:19, 48:11, 52:9, 54:17, 68:12, 68:21, 71:9, 77:6, 79:17, 86:7, 88:8, 96:16, 99:14, 103:17, 106:25, 109:17, 114:7, 115:6, 121:3, 121:4, 123:2, 125:18, 131:1, 131:21, 131:24, 135:24, 136:12, 137:11, 141:9, 141:17, 141:23, 146:3, 146:9, 149:13, 149:23, 151:10, 151:19, 153:24, 158:2, 159:13, 166:4, 171:8, 173:2, 174:18, 175:8, 179:18, 180:13, 183:4, 187:11, 190:23, 194:5, 195:2
up-to-date [2] - 121:3, 121:4
updated [1] - 19:22
updates [1] - 120:17
upper [1] - 22:16
urinate [1] - 68:24
URL [1] - 21:3
useful [1] - 95:3
user [99] - 7:15, 9:4, 9:9, 10:22, 16:8, 16:11, 17:8, 19:3, 19:7, 20:8, 22:9, 22:11, 22:13, 23:6, 24:12, 24:13, 24:15, 25:3, 25:13, 25:14, 25:19, 25:22, 26:7, 26:17, 27:3, 27:11, 27:17, 31:21, 31:23, 37:22, 38:4, 38:10, 40:8, 40:15, 40:16, 40:19, 40:25, 41:2, 41:4, 41:16, 44:19, 44:21, 44:24, 45:1, 45:22, 45:25, 46:3, 46:12, 47:2, 47:13, 47:16, 60:3, 64:6, 65:2, 65:6, 65:7, 65:17, 66:2, 66:7, 66:12, 66:13, 71:25,

<p>72:18, 76:3, 76:5, 78:4, 85:14, 85:18, 85:22, 86:3, 86:4, 86:11, 86:14, 87:4, 87:20, 88:12, 88:19, 88:24, 90:1, 93:10, 93:11, 100:17, 101:9, 105:11, 105:12, 106:4, 112:18, 112:22, 124:20, 135:4, 164:15, 164:22, 164:24, 165:5, 182:17, 189:4</p> <p>user's [10] - 9:8, 39:25, 46:5, 46:21, 87:12, 87:15, 105:14, 137:23, 146:12, 182:15</p> <p>username [14] - 25:16, 37:23, 38:5, 63:6, 84:17, 85:15, 85:18, 96:2, 113:8, 127:6, 129:7, 129:11, 130:11, 148:4</p> <p>users [47] - 7:18, 9:3, 10:10, 16:7, 23:10, 24:6, 24:10, 26:19, 31:4, 37:7, 37:12, 37:16, 37:18, 40:5, 45:18, 46:9, 46:14, 46:16, 47:7, 59:11, 59:13, 59:18, 64:15, 64:22, 65:11, 65:22, 66:9, 66:14, 67:1, 73:2, 100:21, 106:18, 116:17, 120:17, 122:16, 125:4, 163:20, 168:20, 169:1, 175:1, 178:16, 178:25, 180:10, 181:22, 182:9</p> <p>users' [1] - 9:20</p> <p>uses [6] - 9:23, 16:7, 101:12, 104:18, 123:6, 124:9</p> <p>utilize [2] - 59:3, 59:10</p> <p>utilized [3] - 38:15, 51:22, 82:13</p> <p>utilizing [3] - 90:13, 93:1, 105:19</p>	<p>77:9, 78:21, 125:1, 144:9</p> <p>validly [1] - 11:24</p> <p>value [2] - 76:15, 78:22</p> <p>variations [2] - 23:3, 25:2</p> <p>variety [2] - 14:25, 38:21</p> <p>various [11] - 11:25, 12:18, 15:7, 21:13, 27:16, 30:3, 30:14, 31:3, 45:21, 96:9, 105:1</p> <p>vast [1] - 67:25</p> <p>vehicle [3] - 187:15, 187:17, 187:18</p> <p>verified [1] - 145:6</p> <p>verify [3] - 33:6, 145:4, 145:6</p> <p>Verizon [1] - 42:22</p> <p>version [9] - 63:4, 100:13, 110:2, 120:18, 121:3, 121:4, 121:12, 122:13, 148:3</p> <p>versus [6] - 4:2, 82:25, 176:24, 179:25, 194:23, 200:21</p> <p>VHS [10] - 187:6, 187:11, 188:19, 190:7, 190:15, 190:17, 190:24, 191:4, 191:8</p> <p>via [2] - 1:22, 164:18</p> <p>viable [2] - 32:25, 155:22</p> <p>video [7] - 23:7, 24:13, 24:14, 24:15, 24:16, 24:17, 52:7</p> <p>Videos [5] - 27:22, 31:23, 31:25, 38:7, 44:25</p> <p>videos [9] - 27:24, 28:9, 29:12, 29:23, 29:25, 30:12, 32:4, 32:11, 100:20</p> <p>videotapes [1] - 190:12</p> <p>view [1] - 100:19</p> <p>viewed [2] - 132:12, 133:8</p> <p>viewing [3] - 31:22, 38:9, 87:5</p> <p>views [1] - 7:1</p> <p>violate [1] - 199:25</p> <p>violated [3] - 198:15, 199:11, 201:11</p> <p>violates [1] - 200:4</p> <p>violating [1] - 182:10</p>	<p>violation [13] - 4:12, 4:14, 8:11, 12:21, 118:14, 177:8, 186:15, 186:22, 190:19, 194:6, 198:17, 201:16, 201:23</p> <p>violations [2] - 12:17, 15:3</p> <p>Violent [1] - 14:12</p> <p>Virginia [71] - 8:6, 8:18, 10:7, 11:14, 12:7, 12:10, 12:11, 13:8, 15:14, 35:20, 36:15, 36:23, 37:1, 38:14, 41:9, 45:11, 56:8, 57:18, 57:19, 58:4, 58:12, 58:14, 58:15, 58:17, 58:21, 58:23, 59:19, 62:14, 62:17, 63:17, 76:20, 81:22, 82:8, 83:7, 85:24, 92:1, 99:18, 110:3, 110:5, 110:16, 121:20, 127:8, 167:12, 171:9, 181:21, 181:23, 181:24, 181:25, 182:18, 183:21, 184:15, 185:4, 185:9, 185:25, 186:4, 186:10, 186:19, 187:5, 189:1, 189:6, 189:16, 190:23, 190:25, 192:3, 192:5, 192:12, 192:15, 192:20, 193:2, 193:21, 193:22</p> <p>virtual [3] - 188:15, 192:2, 192:4</p> <p>visit [3] - 106:2, 112:6, 117:22</p> <p>visited [2] - 105:20, 112:24</p> <p>visiting [6] - 106:2, 116:17, 116:23, 117:1, 118:8, 169:5</p> <p>visits [2] - 105:12, 112:18</p> <p>void [4] - 73:2, 176:11, 201:25</p> <p>volumes [1] - 187:6</p> <p>voluntarily [1] - 181:22</p> <p>volunteering [1] - 98:4</p> <p>volunteers [1] - 101:4</p> <p>VS [1] - 1:5</p>	<p>vulnerabilities [5] - 120:21, 120:23, 121:1, 123:24</p> <p>vulnerability [4] - 107:11, 121:8, 121:10, 122:10</p> <p>vulnerable [2] - 120:19, 124:11</p>	<p>W</p> <p>wait [1] - 141:20</p> <p>walk [3] - 69:23, 69:24, 69:25</p> <p>walked [2] - 190:1, 190:6</p> <p>walks [1] - 191:8</p> <p>wants [4] - 42:18, 42:19, 177:21, 194:4</p> <p>ware [1] - 189:9</p> <p>warehouse [11] - 187:5, 187:8, 187:10, 188:18, 188:23, 188:24, 189:3, 190:7, 190:23, 192:2, 192:5</p> <p>warning [3] - 20:1, 23:5, 52:5</p> <p>Warrant [4] - 116:8, 178:5, 197:20, 200:7</p> <p>warrant [185] - 4:19, 5:6, 8:16, 9:2, 9:13, 10:6, 10:12, 10:25, 11:13, 11:24, 12:5, 12:8, 12:12, 12:16, 12:24, 13:2, 13:7, 13:8, 13:11, 33:18, 35:19, 35:21, 35:22, 35:23, 36:2, 36:6, 37:2, 37:4, 37:21, 41:9, 49:3, 54:7, 54:10, 54:20, 55:13, 55:16, 55:18, 55:19, 55:22, 56:8, 56:9, 56:18, 57:4, 59:4, 59:6, 59:10, 62:5, 63:2, 65:6, 65:9, 66:3, 67:3, 76:19, 77:21, 78:1, 78:10, 78:21, 79:3, 79:6, 79:9, 79:17, 80:21, 80:23, 80:24, 81:1, 81:4, 81:6, 81:8, 81:9, 81:17, 81:19, 82:12, 82:23, 83:5, 83:10, 84:3, 85:7, 89:2, 90:7, 99:15, 99:16, 99:17, 104:10, 104:20, 104:24, 110:24,</p>	<p>111:2, 111:11, 111:18, 111:20, 113:17, 113:21, 114:2, 114:19, 114:20, 115:23, 121:18, 121:19, 123:3, 124:12, 125:1, 129:6, 137:14, 137:19, 144:10, 144:22, 145:24, 147:2, 147:8, 161:23, 165:24, 167:1, 167:3, 167:9, 167:11, 167:22, 168:1, 175:14, 176:7, 176:8, 176:11, 176:12, 176:17, 177:1, 177:3, 177:19, 178:4, 178:6, 178:23, 179:10, 179:11, 179:14, 181:2, 181:13, 182:8, 182:12, 182:21, 183:7, 183:8, 183:19, 183:21, 184:1, 184:6, 184:25, 185:1, 185:6, 185:15, 185:17, 185:20, 186:6, 186:8, 186:13, 186:21, 190:19, 192:8, 195:12, 197:12, 197:15, 197:21, 198:12, 199:4, 199:7, 199:8, 199:10, 199:15, 199:17, 200:4, 200:8, 200:14, 200:16, 200:25, 201:1, 201:4, 201:8, 201:11, 201:14, 201:25, 202:1, 202:9, 202:15, 202:18</p> <p>warrant's [1] - 166:3</p> <p>warranted [2] - 177:9, 177:11</p> <p>warrants [15] - 11:7, 12:12, 48:23, 49:2, 81:13, 81:15, 83:2, 100:2, 117:6, 165:25, 177:25, 178:9, 182:3, 186:25, 201:19</p> <p>wash [1] - 171:6</p> <p>washes [1] - 171:3</p> <p>Washington [9] -</p>
--	---	---	---	---	---

98:24, 114:11,
122:20, 159:11,
160:20, 162:4,
168:23, 168:25,
179:6
watch [1] - 100:20
watching [1] - 143:14
water [1] - 68:23
watering [5] - 118:1,
118:4, 118:6,
120:11, 123:7
waves [1] - 195:21
ways [2] - 117:13,
150:21
weaknesses [1] -
169:24
web [1] - 122:2
Web [10] - 18:25, 29:1,
34:24, 59:15,
100:18, 100:19,
103:22, 106:11,
109:5, 136:12
website [199] - 7:15,
7:16, 7:17, 7:25, 8:3,
8:4, 8:10, 9:3, 9:5,
9:6, 9:14, 10:10,
10:12, 10:18, 16:9,
16:12, 16:13, 16:15,
16:23, 16:25, 18:2,
18:3, 18:4, 18:8,
18:11, 19:6, 19:10,
20:13, 20:15, 20:22,
20:25, 21:18, 21:23,
22:10, 22:12, 22:14,
23:7, 23:11, 24:7,
24:25, 25:14, 25:17,
25:24, 26:11, 26:16,
27:4, 27:12, 27:13,
27:14, 27:16, 27:17,
27:20, 27:22, 28:2,
28:6, 28:9, 29:5,
30:9, 30:11, 30:16,
30:18, 31:3, 31:7,
31:8, 31:11, 32:10,
32:14, 32:16, 32:22,
33:2, 33:8, 33:11,
33:12, 33:24, 33:25,
34:2, 34:13, 35:4,
35:8, 35:14, 35:15,
35:16, 36:13, 36:17,
36:18, 36:21, 36:24,
37:7, 37:9, 37:13,
37:16, 37:23, 38:5,
38:7, 38:17, 38:19,
40:9, 40:12, 40:16,
40:24, 40:25, 41:20,
42:4, 42:7, 42:11,
42:12, 42:19, 44:22,
44:24, 45:1, 45:19,
46:3, 46:7, 46:11,

46:17, 46:18, 47:8,
47:13, 51:1, 52:4,
52:15, 53:4, 53:9,
53:15, 53:16, 53:18,
53:21, 54:7, 54:11,
54:25, 55:4, 57:10,
57:19, 58:11, 58:12,
59:1, 59:5, 59:8,
59:9, 59:14, 60:3,
64:6, 65:1, 65:8,
65:12, 67:1, 70:6,
70:7, 70:15, 70:21,
70:24, 72:1, 72:7,
73:19, 76:4, 85:19,
85:23, 87:7, 88:14,
88:21, 93:12, 93:13,
95:11, 95:12, 95:23,
102:9, 102:24,
103:4, 103:11,
103:18, 105:12,
105:13, 116:14,
122:18, 155:20,
155:23, 155:24,
157:10, 159:4,
159:10, 164:16,
164:18, 165:1,
167:5, 167:10,
167:24, 171:14,
171:15, 174:24,
175:2, 175:5, 175:6,
180:11, 181:21,
182:10, 202:11
Website [4] - 3:5, 3:6,
3:7, 3:8
websites [38] - 15:22,
17:22, 17:24, 18:8,
18:9, 18:21, 19:13,
19:14, 19:15, 19:16,
19:22, 19:25, 20:1,
20:5, 20:8, 20:9,
20:10, 21:9, 21:10,
23:3, 23:4, 24:8,
24:20, 26:13, 26:25,
27:4, 47:25, 52:6,
54:3, 64:13, 70:12,
73:1, 91:9, 100:15,
101:1, 116:18,
122:19
week [6] - 6:12, 10:13,
41:21, 78:5, 154:16,
168:17
weeks [3] - 8:8,
158:23, 180:13
well-resourced [1] -
106:22
WESTERN [1] - 1:1
Western [6] - 1:19,
7:15, 10:24, 48:24,
68:17, 205:5
westlaw [1] - 176:25

whereas [1] - 100:18
White [2] - 168:16,
171:15
white [1] - 176:4
whodunit [2] - 137:16,
145:15
whole [3] - 84:13,
105:10, 137:11
wi [9] - 44:7, 90:13,
113:7, 138:10,
138:20, 138:25,
139:1, 139:18
wi-fi [9] - 44:7, 90:13,
113:7, 138:10,
138:20, 138:25,
139:1, 139:18
widely [1] - 75:8
wife [1] - 138:5
wiki [4] - 21:11, 21:12,
21:21, 70:11
wild [1] - 124:16
William [1] - 200:21
willing [3] - 157:16,
173:22, 176:7
window [6] - 60:24,
61:1, 61:3, 61:8,
61:10, 180:17
Windows [1] - 113:11
wiping [1] - 73:10
WIRE [1] - 130:25
wireless [1] - 43:12
Wireshark [8] - 3:13,
130:25, 131:3,
131:13, 132:7,
134:1, 148:8
wish [2] - 25:20,
163:13
wit [1] - 67:22
withdraw [1] - 173:14
withheld [1] - 80:3
witness [22] - 5:8,
5:12, 6:1, 13:20,
13:22, 49:23, 50:7,
52:21, 67:25, 68:21,
80:1, 80:15, 96:21,
97:8, 97:10, 102:13,
111:17, 111:19,
119:1, 153:14,
153:15, 153:17
WITNESS [28] - 40:3,
72:9, 72:22, 74:10,
74:17, 75:5, 76:8,
93:18, 96:24, 125:5,
125:13, 128:23,
132:24, 133:14,
140:23, 141:4,
142:2, 142:9,
142:18, 142:21,
149:21, 149:25,
150:3, 150:11,

151:3, 151:11,
153:22, 174:11
WITNESSES [2] -
2:11, 2:18
witnesses [10] - 5:11,
49:21, 67:17, 68:6,
69:17, 93:20, 97:3,
174:12, 174:13,
203:21
witnesses' [1] - 67:18
word [5] - 39:10,
39:19, 39:22, 62:7,
125:16
worded [1] - 46:19
words [4] - 39:5,
70:15, 74:23, 100:7
works [4] - 85:17,
100:8, 100:10, 135:2
world [11] - 16:6,
16:19, 17:21, 31:12,
101:24, 108:13,
124:5, 135:19,
138:18, 170:24,
186:3
worried [2] - 108:12,
108:17
worry [3] - 75:17,
77:4, 154:21
wrap [1] - 174:18
write [6] - 106:8,
106:13, 108:20,
120:16, 120:24
writing [2] - 115:6,
196:14
written [7] - 84:4,
104:25, 128:1,
128:2, 140:1,
149:12, 150:6
wrongful [1] - 181:9
wrote [5] - 107:10,
107:24, 151:9,
158:5, 168:17

Y

y'all [2] - 38:14,
174:18
year [17] - 4:16, 98:25,
108:11, 108:12,
116:16, 121:25,
126:12, 153:3,
159:9, 159:14,
160:15, 160:25,
161:18, 171:12,
171:13, 171:17,
171:20
years [16] - 98:18,
104:4, 107:3,
108:10, 118:21,
123:18, 126:8,

126:10, 156:12,
158:13, 159:2,
159:12, 159:13,
161:6, 161:10, 166:1
yielded [1] - 75:4
York [4] - 14:19,
14:23, 14:24, 115:7
yourself [2] - 121:5,
137:9

Z

zero [10] - 121:1,
122:12, 123:12,
123:24, 124:8,
124:10, 168:14,
168:16
zero-day [7] - 121:1,
122:12, 123:12,
123:24, 124:10
zero-days [3] - 124:8,
168:14, 168:16
Zoo [1] - 30:17
zoo [2] - 30:19, 30:20